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ABSTRACT

This package of nutrition lessons was developed for teaching pregnant teenagers and teenaged parents enrolled in School-Aged Maternity (SAM) Programs in Wisconsin about nutrition. This guide provides a set of flexible lessons and resources for the SAM teacher (and for any person involved in teaching pregnant teenagers or teenaged parents) to introduce nutrition into the curriculum. The step-by-step format of activities can eliminate much of the time usually spent planning entire units or lessons. The guide consists of 14 complete lesson plans. Lesson "0" offers the teacher an opportunity to guage which of the other lessons would be most appropriate for a particular class. The remaining lessons are divided among three sections: (1) nutrition in teenaged pregnancy; (2) nutrition during lactation and infant feeding; and (3) nutrition for non-pregnant teenagers. Also included is an appendix listing various resources. (JMK)

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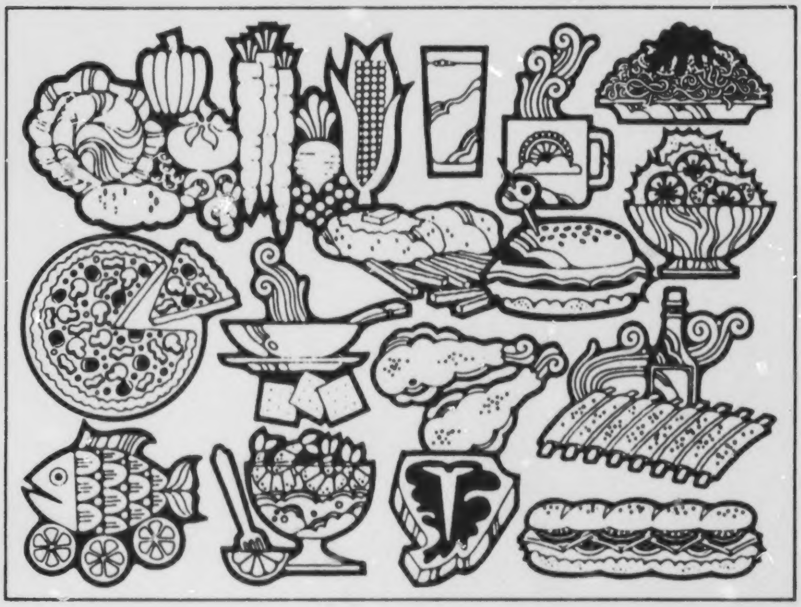

NUTRITION
IN TEENAGE PREGNANCY

a curriculum guide

Wisconsin Department of Public Instruction
Herbert J. Grover, State Superintendent

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NUTRITION IN TEENAGE PREGNANCY

A Curriculum Guide

by
Dian Gans

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INTRODUCTION

This package of nutrition lessons was developed for pregnant teenagers and teenaged parents enrolled in School-Aged Maternity Programs (SAM Programs) in Wisconsin. Throughout the state, the Programs themselves are as diverse as the communities which they serve. Each district is free to develop its program within general state guidelines; curricula and access to resources differ; and, likewise, the emphasis given to nutrition, as important as it may be, varies.

This guide is an attempt to provide a set of flexible lessons and resources for the SAM teacher (and for any person involved in teaching pregnant teenagers or teenaged parents) to introduce nutrition into the curriculum. The step-by-step format of the activities can eliminate much of the time usually spent planning entire units or lessons. However, the variety of activities within a lesson allows the teacher flexibility to address objectives most important to the particular class within time constraints.

Initially, a questionnaire was sent to the twenty-eight SAM Programs in existence in March 1981. Responses to the questionnaire presented a clear picture of the diversity of the Programs and highlighted the need for lessons which varied in the amount of time required, the educational level and the need for outside resources. Three sample lessons, covering some aspect of pre-natal, post-natal, and non-pregnant teenage nutrition, were developed and field-tested by eight SAM teachers chosen to represent a diverse student population. Their suggestions were incorporated into the revised lessons and were considered while developing the remaining lessons.

The material included in this guide was developed by Dian Gans, under the supervision of Dr. S. Jane Voichick at the University of Wisconsin, Madison. Two members of the Nutritional Sciences Department edited each lesson; the pre-test in Lesson "O" was reviewed for ambiguity by six nutritionists.

OVERVIEW OF THE GUIDE

The format of this guide is incomplete: the ideal would be presentation of an integrated educational program for school-aged parents with nutrition being just one part. These lessons are best thought of as suggestions toward that end. Many of the worksheets could be used in integrated programs such as for language or spelling lessons. Others could be part of home economics or health units.

HIGHLIGHTS:

1. Lesson "O" offers the teacher an opportunity to gauge which of the other lessons would be most appropriate to the particular class. Included are:
    * a review of elementary concepts in nutrition.
    * a pre-test covering all the objectives in Lessons 1 through 13. All or part of the pre-test could be used.
    * preference sheet to evaluate student's interest in topics in the guide.
2. The remaining lessons of the guide are divided amongst three "sections":
    * Lessons 1 through 9: nutrition in teenaged pregnancy
    * Lessons 10 through 13: nutrition during lactation and infant feeding
    * Lessons A-1 through A-5, in Appendix A: Supplementary lessons covering non-pregnant teenaged nutrition, based on the "4 plus 1" food groups (see the included "Hassle-Free Guide to a Better Diet" from the USDA)
3. Appendix B: a variety of resources:
    * an annotated bibliography
    * lists of films/filmstrips, books/pamphlets, literature articles
    * reprints of special interest
    * mini-food composition table

LESSON: FORMAT AND SUGGESTIONS FOR USE

The lessons have been designed to be self-contained units which can be "lifted" from the guide and used in any order or in any number, depending upon the particular needs of the student or class. Each of the lessons, including those in Appendix A, contains similar features.

EACH LESSON CONTAINS:

- * Focus, or a statement of what the lesson covers.
- * Objectives (behavioral). The lesson contains at least one activity which addressed each objective; some activities address more than one objective.
- * Teacher's Notes. A short summary of information pertinent to the lesson, which can be scanned quickly as an introduction to the content of the lesson.
- * References. Several books or pamphlets which would be especially useful for gaining more in-depth information.
- * Suggested Activities. Most can be adapted to either individual or class use. Most lessons include both cooking and non-cooking activities.
- * Supplementary materials: Worksheet ("THE PUZZLE PAGE"), Information Sheet ("B-RIGHT IDEAS"), and Recipe(s).

The lessons do not include review questions, tests, or time allotments for each activity. The individual teacher is the best judge of how much time can or should be used for any one activity and of how best to evaluate the students' progress.

HOW TO USE THIS GUIDE

** Make initial use of the pre-test and preference sheet in Lesson "O".

** Identify which lesson (or lessons) will best fit into your curriculum.

** Read the focus of the lesson. From the objectives, choose those which you want to address.

** Identify which of the activities could be used to help the students reach the objectives you've chosen.

** Duplicate the information sheet, the worksheet, supplementary material, and recipes (if included) before presenting the activities to the class.

** Encourage the students to seek help from "home", in order to strengthen communication between the school and the family (or others involved with the student).

** Be as flexible and innovative as possible in use of the activities. They are only suggestions (guidelines, if you will) which should be adapted to your particular teaching situation.

** Consider the use of student notebooks to save information and results of activities for further reference.

PRENATAL NUTRITION

LESSON "O"

PRELIMINARIES, PRETEST, AND PREFERENCES

FOCUS

Foods can be grouped into classes because of the nutrients which they contain. While the energy values of all foods can be measured in Calories (kilocalories), no one food is a perfect food (no one food can sustain life all by itself) so we must eat a variety of foods to obtain a balanced diet.

OBJECTIVES

The student will be able to:

1. identify particular concepts ("nutrient", "calorie", "food group", etc.) when given a list of definitions.
2. recognize that nutrient requirements are not the same for non-pregnant teenagers and pregnant teenagers.
3. explain that pre-pregnancy nutrition is important for protection of both mother and baby during pregnancy.

TEACHER'S NOTES

This lesson contains no activities, *per se*, as do the other lessons. Instead, a pre-test is included with questions about topics from Lessons 1 - 13; there are no questions for the lessons in the Appendix (Lessons A1 - A5). Behind each question is a set of numbers; the first number refers to the lesson, the second refers to the objective in the lesson. You may choose to use the whole pre-test, or to excerpt sections that are most pertinent to your class. You may also wish to revise the form of the questions or even administer the test orally.

The pre-test also contains a section for the student to express her preferences of topics which would be most useful or interesting to her. These choices *do* include the lessons in the Appendix.

The Information Handout and Worksheet could be used together to review common nutritional concepts or to learn those not yet familiar.

REFERENCES

Brody, Jane. *Jane Brody's Nutrition Book*. New York: W. W. Norton and Company, 1981.

Pipes, Peggy L. *Nutrition in Infancy and Childhood*. 2nd ed. St. Louis: The C. V. Mosby Company, 1981.

Worthington-Roberts, Bonnie S.; Vermeersch, Joyce; and Williams, Sue Rodwell. *Nutrition in Pregnancy and Lactation*. 2nd ed. St. Louis: The C. V. Mosby Company, 1981.

Any reliable introductory nutrition text (such as for a college nutrition of home economics course); for example, Hamilton, Eva May, and Whitney, Eleanor. *Nutrition: Concepts and Controversies*. St. Paul, Minnesota: West Publishing Company, 1979.

INFORMATION HANDOUT

Duplicate and distribute "B-RIGHT IDEAS" to the students. Read over the handout with the class or individual students to emphasize particular points and answer questions.

WORKSHEET

Duplicate "THE PUZZLE PAGE" and use as in-class exercise or as a take-home exercise. If sent home, encourage the student to seek the help of others in the family or living group. If you wish to use the worksheet as a quiz, simply blank out the answers at the bottom of the page.

LESSON "O"

◆◆◆◆◆◆◆◆◆◆◆◆

PREFERENCES:

Read the descriptions below of various topics about nutrition that could be covered in your school-aged mother/parent class. Choose the five in which you are most interested or which you feel are the most important to cover. Rate them from one to five, using "one" as your highest (best) choice.

______ A review of the four (plus one) food groups, with emphasis on sources, sizes of servings, and specific needs. (Lessons A1 - A5)

______ How many Calories to eat during pregnancy. What is considered a healthy weight gain and why. (Lesson 1)

______ Why protein is important during pregnancy. Which foods are protein-rich. How to use complementary proteins. (Lesson 2)

______ The importance of calcium during pregnancy. Which foods are calcium-rich. Some ways to get enough calcium if you can't or don't drink milk. (Lesson 3)

______ Which minerals are especially important during pregnancy and why. Good food sources of each mineral. (Lesson 4)

______ Which vitamins are especially important during pregnancy and why. Good food sources of each vitamin. (Lesson 5)

______ What is really considered a drug. Dangers of drugs during pregnancy. (Lesson 6)

______ How to improve your nutrition during pregnancy when eating away from home... fast foods, bag lunches, school food services. (Lesson 7)

______ How to shop for economy and nutrition. Help with menu planning and food buying. (Lesson 8)

______ How to deal with common problems of pregnancy...constipation, nausea, heartburn. What is pica and why it is dangerous to your baby. (Lesson 9)

______ Breast or bottle? Which is best? Why? When? (Lesson 10)

______ When can my baby begin on solid foods? Which foods are best to begin with and in what order. (Lesson 11)

______ Changes that should be made in the diet if you are nursing. (Lesson 12)

______ Community and governmental agencies that can offer nutrition services and information to the pregnant teenager and young mother. (Lesson 13)

LESSON "O"

◆◆◆◆◆◆◆◆◆◆◆◆

PRE-TEST:

Below are some statements about food and nutrition during pregnancy. In each statement there are some words or numbers in parentheses. Circle the one choice of word(s) or number(s) within each parenthesis which you think most correctly completes the statement. The numbers after each statement are for your teacher's use; just ignore them.

1. The pregnant teenager needs about (300, 500, 1000) Calories more each day for her own growth and for the development of the baby. (1-1)
2. During an uncomplicated pregnancy, a good, normal weight gain is about (10, 25, 40) pounds. (1-2)
3. The extra food needed during pregnancy maintains the health of (the mother only, the baby only, both the mother and the baby). (1-3)
4. A low weight gain of about 10-15 pounds during pregnancy is (good, not good, of no importance) for producing a healthy baby. (1-4)
5. Excess dietary protein (can, cannot) be stored in the body and should be eaten (every day, every three days only). (2-1)
6. A good source of animal protein is (bacon, chicken, beef fat); a good source of vegetable protein is (celery, kidney beans, potatoes). (2-2)
7. (Rice and beans, lettuce and tomatoes, ketchup and french fries) is an example of using combinations of vegetable proteins wisely. (2-3)
8. The nutrient needed in pregnancy for the growth of the baby's tissues and in nursing to produce milk is (protein, carbohydrate, fat). (2-4)
9. The pregnant teenager needs at least (5, 7, 9) servings of calcium-rich foods each day. (3-1)
10. Non-milk sources of calcium include (collards and fish with edible bones, chocolate and peanuts, kidney and lima beans). (3-2)
11. (Iron, Calcium, Sodium) is important for the proper growth of bones and teeth in developing baby and for the maintenance of healthy bones in the mother. (3-3)
12. Table salt (should, should not) generally be restricted during pregnancy. (4-1)
13. (Calcium, Iron, Sodium) is a mineral necessary during pregnancy to produce the blood for both baby and mother. (4-2)
14. (Iodine, Iron, Calcium) is a mineral needed during pregnancy to help both the mother and baby use energy in the proper way. (4-3)

15. For proper growth of the baby's nerves and skeleton, the mother should have an adequate amount of the mineral (iron, sodium, zinc) in her diet. (4-4)

16. A good food source of iron is (meat, fruits, vegetables). (4-2)

17. (Seafoods, fruits, vegetables) are a good source of iodine. (4-3)

18. A pregnant teenager could include (vegetables, meat, enriched white bread) in her diet to insure that her baby has enough zinc. (4-4)

19. Vitamin D and (vitamin A, niacin, riboflavin) help maintain the health of the pregnant teenager and are especially important for her baby's developing body cells. (5-1)

20. A type of anemia may be prevented if the pregnant teenager eats foods rich in (vitamin E, vitamin A, folacin). (5-2)

21. To produce healthy bones, skin, and tendons, the developing baby needs an adequate supply of vitamins A and (vitamin E, folacin, vitamin C) from his/her mother's diet. (5-3)

22. The "healthy-bone" vitamin for both pregnant mothers and their developing babies can be gotten from sunlight or from food. This vitamin is (A, C, D). (5-4)

23. (Carrots and dark yellow squash, Celery and cucumbers, Eggplant and tomatoes) are very rich in vitamin A. (5-1)

24. Folacin (a B-vitamin) can be gotten in the diet by eating (broccoli and leafy green vegetables, milk and cheese, nuts and raisins). (5-2)

25. If the pregnant teenager needs to increase her intake of vitamin C, she should eat more (green peppers and oranges, whole grains, carrots and liver). (5-3)

26. A good food source of vitamin D is (green and yellow vegetables, fortified milk, red meats). (5-4)

27. The pregnant teenager needs at least (2, 4, 5) servings of vitamin C-rich foods each day. (5-5)

28. Alcohol, caffeine, and nicotine (are not, are) dangerous substances to use during pregnancy. (6-1)

29. A baby with Fetal Alcohol Syndrome may be (mentally retarded, tall for its age) and have (unusual facial features, large hands). (6-2)

30. (Aspirin and cough syrup, Tranquilizers, Antibiotics) are examples of over-the-counter drugs. (6-3)

31. Vitamin/mineral preparation are (usually necessary, sometimes useful, never needed) during pregnancy. (6-4)

32. Smoking (is dangerous, is not dangerous) for the developing baby. (6-5)

33. Fast foods (are dangerous, can be okay occasionally, are fine for a steady diet) during pregnancy. (7-1)

34. Nutritious snacks should be picked from (foods high in calories, foods from the first four food groups, foods from the fifth food group). (7-2)

35. Select the beverage that will give this school lunch menu a representative from each of the four food groups: ham salad sandwich on whole wheat bread, carrot and celery sticks, banana and (tomato juice, low-fat milk, soft drink). (7-3)

36. You will be preparing a casserole using chicken meat. (Whole fresh chicken, Fresh chicken breasts, Canned chicken) would be the least expensive way to buy the chicken. (8-1)

37. A food combination which illustrates using complementary proteins is (cheese and tomato pizza, lettuce and tomato sandwich, ice cream with chocolate sauce). (8-2)

38. To help keep your grocery bill low, you should (shop when hungry, buy all specials, make and use a list). (8-3)

39. Nutrition labels on food (are required on all foods, help in choosing the most nutritious foods for the money, contain the manufacturer's name and address). (8-4)

40. Morning sickness during early pregnancy may be helped by eating more, smaller meals and by (eating more spicy food, drinking fluids with meals, avoiding greasy or fried foods). (9-1)

41. Constipation may be relieved by including more fiber in the diet, by exercising regularly, and by (drinking more water, eating enriched breads, peeling fruits and vegetables). (9-2)

42. Heartburn may occur during the last few months of pregnancy, but it may be helped by (eating larger meals, reducing the amount of fatty foods, eating more whole grain breads). (9-3)

43. Eating non-food items during pregnancy--such as ashes, laundry starch, or clay--(is not dangerous, is rarely dangerous, is dangerous) to the developing baby. (9-4)

44. For the teenaged mother, the choice of bottle- or breast-feeding depends upon (only the mother's feelings, only the infant's needs, both mother's feelings and infant's needs). (10-1 and 10-2)

45. Unmodified cow's milk (is, is not) a proper food for a young infant. (10-4)

46. Vitamin/mineral supplements are (always necessary, sometimes necessary, never necessary) for both bottle- or breast-fed babies. (10-5)

47. Solid foods should be introduced into your infant's diet no earlier than (2, 4, 8) months. (11-1)

48. Sugar and (water, salt, flour) are unnecessary additives to any baby food. (11-2)

49. Home-prepared baby food is usually (cheaper, more expensive, safer) than commercially-prepared baby food, but both can be (nutritionally adequate, too low in sugar, stored without refrigeration). (11-3)

50. Your infant's first food source of iron will probably be (meat or meat substitutes, egg yolk, fortified cereal). (11-4)

51. Your (mother, doctor, friend) is the best source of information about whether or not your baby should continue vitamin/mineral supplements once he/she has begun eating solid foods. (11-5)

52. If you are nursing, you should increase your energy intake by about (200, 300, 500) Calories each day, your protein intake by about (5, 20, 50) grams a day, and your liquid intake to total about (1, 3, 7) quarts a day. (12-1)

53. By adding about three cups of (fruit juice, milk, water) to your diet each day while nursing, the increased nutritional needs could be met. (12-2)

54. The nursing mother should increase her intake of foods which contain vitamin C, vitamin E, and (rutin, pangamic acid, folacin). (12-3)

55. Vitamin E-rich foods include whole grain products and (vegetables, vegetable oils, fruits). (12-4)

56. Drugs taken by the mother while nursing (can, cannot) enter the milk. (12-5)

57. Pregnant teenagers and young mothers can obtain nutrition information or services from the WIC Program and the (Food Stamp Program, Title VII Program, City Weights and Measures Department). (13-1)

58. A local agency that can give the young mother birth control information or refer her to other help is (Planned Parenthood, WIC, Food Stamp Program). (13-2)

LESSON "O"

ANSWER KEY TO THE PRE-TEST

1. 300
2. 25
3. both the mother and the baby
4. not good
5. cannot, every day
6. chicken, kidney beans
7. Rice and beans
8. protein
9. 5
10. collards and fish with edible bones
11. Calcium
12. should not
13. Iron
14. Iodine
15. zinc
16. meat
17. Seafoods
18. meat
19. vitamin A
20. folacin
21. vitamin C
22. D
23. Carrots and dark yellow squash
24. broccoli and leafy green vegetables
25. green peppers and oranges
26. fortified milk
27. 2
28. are
29. mentally retarded, unusual facial features
30. Aspirin and cough syrup
31. sometimes necessary
32. is dangerous
33. can be okay occasionally
34. foods from the first four food groups
35. low-fat milk
36. Whole fresh chicken
37. cheese and tomato pizza
38. make and use a list
39. help in choosing the most nutritious food for the money
40. avoiding greasy or fried foods
41. drinking more water
42. reducing the amount of fatty foods
43. is dangerous
44. both mother's feelings and infant's needs
45. is not
46. sometimes necessary
47. 4
48. salt
49. cheaper, nutritionally adequate
50. fortified cereal
51. doctor
52. 500, 20, 3
53. milk
54. folacin
55. vegetable oils
56. can
57. Food Stamp Program
58. Planned Parenthood

LESSON "O"

B - RIGHT IDEAS

GENERAL NUTRITION CONCEPTS (Information Sheet)

The food that you eat and drink contains nutrients, which are substances which the body can use to grow, repair itself, or maintain its tissues. These nutrients can be grouped into six major categories:

1. Carbohydrates, which are the sugars and starches. These are your body's main fuel.
2. Proteins, which are the nutrients that your body uses mainly for growth and repair. Meats and meat substitutes are high protein foods, but careful combinations of plant proteins can approximate those found in meats.
3. Fats, which contain over twice the calories per weight as do the carbohydrates and proteins. Animal fat (on meats, butter) and vegetable oils are examples.
4. Vitamins, which are organic compounds that the body needs in small quantities. Examples are vitamin C and B_3 (niacin).
5. Minerals, which are inorganic elements that the body needs in small quantities. Examples are iron and calcium.
6. Water, which is the nutrient most essential (necessary) to your body. You can survive only a few days without water, but could survive up to two months without food.

The food that you eat and drink can also be divided in another way, since you don't think of eating "nutrients", but rather "types of foods". Thus nutritionists have devised the Four (plus one) Food Groups:

1. Fruits and Vegetables
2. Grain Foods: Breads and Cereals
3. Milk and Milk Products
4. Meat and Meat Substitutes
5. "Others" (Fats, Oils, Sugar Foods, Alcohol)

These groups make meal planning and balancing your diet simpler; easy rules can help you remember how much of one particular type of food you should eat each day to get the nutrients that your body and your developing baby need for good health.

Lastly, food provides energy for all the different things that the body does. This energy is measured in a unit of heat called the Calorie (kilocalorie). Carbohydrates and proteins produce about the same amount of heat (Calories) in the body, but fat produces more than twice the amount that you get from either carbohydrate or protein. Minerals, vitamins, and water contain no energy, so they have no Calories.

LESSON "O"

THE PUZZLE PAGE

(Worksheet)

From the words listed below, find a word that best fits each definition and write it in the blank beside the definition. The answers are below. Use each answer only once.

Calorie
Energy
Vitamin
Mineral
Fat
Carbohydrates
Protein
Water
Nutrients
Food Group

1. ____________________ A general name for substances from food which are used by the body to help the body grow, repair itself, or maintain itself.

2. ____________________ A nutrient which contains no Calories. It is a fluid without which we can live for only a few days.

3. ____________________ The class of nutrients which includes starches and sugars. It is the animal (human) body's main fuel.

4. ____________________ The ____________________ content of a food is usually measured in Calories.

5. ____________________ The class of nutrients which is used by the body mainly for growth and repair. Meats and meat substitutes are rich in this type of nutrients.

6. ____________________ Two classes of nutrients which are needed in small quantities by the body.
____

7. ____________________ A convenient method of classifying foods that are similar in the nutrients which they contain.

8. ____________________ A class of nutrients which contains butter, salad oil and animal fat (lard).

9. ____________________ The unit used to measure the energy content of food.

Answers: 1. Nutrient 2. Water 3. Carbohydrate 4. Energy 5. Protein
6. Vitamins/Minerals 7. Food Group 8. Fat 9. Calorie

LESSON 1

GAINING IS A REAL PLUS

(Calories and Energy)

FOCUS

Pregnant teenagers must increase their energy intake to maintain their own growth and to produce a healthy baby. The current recommended weight gain is about 24-30 lbs. during the total pregnancy. Lower weight gains may harm the mother or the baby.

OBJECTIVES

The student will be able to:

1. recognize that pregnant teenagers should increase their caloric (energy) intake by at least 300 Calories (kilocalories) per day throughout pregnancy (on the average).
2. identify 24-30 lbs. as an optimum (i.e., not excessive) weight gain in a normal pregnancy.
3. explain that the extra energy is necessary to maintain the health of the mother as well as to produce a healthy baby.
4. state three possible dangers associated with less than optimum weight gain (i.e., too low of a weight gain).

TEACHER'S NOTES

Weight gain in pregnancy varies among women; teenage mothers and first-time mothers tend to gain more than older women and those having other than the first child. The average weight gain is 27 lbs., with a range or 24-30 lbs. being considered normal and healthy. About 2 to 4 lbs. of this gain should accrue during the first three months; during the last six months, weight is gained at about the rate of 3/4 to 1 lb. a week. If the pregnant woman "eats to appetite", the extra intake averages out to about 300 Calories a day throughout pregnancy.

During the first trimester, the uterus grows and the mother's blood expands; during the second trimester, the tissues of the mother continue to grow and stores of maternal reserves are laid down; during the third trimester the growth of the fetus is responsible for the greatest part of the weight gain. If the mother does not gain enough during pregnancy, she may place herself at risk for increased complications of pregnancy such as toxemia, premature birth, prolonged labor, and anemia. Increased risk of death for the mother is a direct result of improper weight gain, and the infant may be born underweight (less than 2500 grams or 5 1/2 lbs.). The "low birth-weight baby" has increased mortality risks and increased incidence of abnormalities such as cerebral palsy, epilepsy, and mental retardation.

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Elswick, Linda L. Teenage Pregnancy and Nutrition: A Review, Albany, New York: The University of the State of New York, 1980.

Luke, Barbara. Maternal Nutrition. Boston: Little, Brown and Company, 1979.

Worthington-Roberts, Bonnie S.; Vermeersch, Joyce; and Williams, Sue Rodwell. Nutrition in Pregnancy and Lactation. 2nd ed. St. Louis: The C. V. Mosby Company, 1981.

INFORMATION HANDOUT

Duplicate and distribute "B-RIGHT IDEAS" to students. Read over the handout with the class or individual student to emphasize particular points and answer questions.

WORKSHEET

Duplicate "THE PUZZLE PAGE" and use as in-class exercise or as a take-home exercise. See Activity #5. If sent home, encourage the student to seek the help of others in the family or living group.

SUGGESTED ACTIVITIES

Activity #1:

Ask the students to pretend that their friend Katy is pregnant and finds that she is not gaining at a satisfactory rate. Using the information sheets from Lessons A-1 through A-5 as references, if necessary, have the students suggest changes in Katy's diet that might help her gain at a better rate.

Suggestions:

1. Eat smaller meals, but more meals throughout the day.
2. Instead of water, coffee, tea, and diet drinks (all low calorie), drink whole milk, milk shakes, fruit juices, eggnog.
3. Spread bread or crackers thickly with foods like peanut butter, cheese spreads, and meat spreads.
4. Eat puddings, custards, and ice cream for desserts.
5. Add more butter, margarine, mayonnaise to foods.
6. Increase use of breads, rolls, potatoes, rice, pasta, corn, etc.
7. Use cream or half-and-half in creamed foods, soups, gravies, and sauces.
8. Eat when relaxed.
9. Drink liquids after the meal instead of with the meal.

Activity #2:

Ask the students to pretend that their friend Barbara is pregnant and finds that she is gaining too fast. Her last check-up showed that nothing was physically wrong, but the doctor suggested that she change her diet a bit to slow down the weight gain. Using the information sheets from Lessons A-1 through A-5 as references, if necessary, have the students suggest changes in Barbara's diet that might help her gain at a better rate.

Suggestions:

1. Substitute skim, or low-fat milk, for whole milk.
2. Use more fresh or raw fruits and vegetables in place of those prepared with sauces, butter, or sugar.
3. Increase the use of high fiber/low calorie foods (such as carrots, celery, dill pickles, etc.).
4. Switch from presweetened to non-sweetened breakfast cereals.

Activity #2 (continued)

5. Avoid fried foods.
6. Prepare meats by baking, broiling, or boiling, without added fat, gravies, sauces.
7. Decrease amount of butter on bread and sugar on cereals.
8. Cut down on intake of high calorie/low nutrient density foods, such as donuts, sweet rolls, chips.

Activity #3:

Combine Activity #1 and #2. Ask the students to prepare lists of both sets of suggestions to keep in their notebooks for further reference. As their pregnancies progress and particular problems arise, refer to the sheet to refresh their memories.

Activity #4:

Preparation:
Duplicate several copies of the "Mini Food Composition Table" in Appendix B, so that several students may share a copy.

Activity:
Using the Table, have the students devise different nutritious ways to include the extra 300 Calories into their eating styles each day. Encourage a variety of responses, such as spreading out the Calories over the day in snacks, adding the Calories to existing meal-times, adding the Calories as drinks throughout the day, preparing a bed-time snack...as long as the emphasis is on NUTRITIOUS. If there is enough interest, suggest that the students prepare a copy of their ideas to include in their notebook or to keep in the classroom for later use in preparing snacks.

Activity #5:

This activity should last for the duration of the pregnancy.

Preparation:
Duplicate the worksheet and distribute to each student to keep in her notebook.

Activity:
Encourage the students to enter their weights periodically (such as after each physical exam), to compare them with the "average". With each entry, have them estimate from the chart about how much each component of the "average" gain now represents (as a percent of the total gain)... and, if possible have them apply the percentage to their particular gain. (This level of mathematical sophistication may not be applicable to all students.) Have the students assume that their infant will weigh 7 1/2 lbs. at birth. Make a transparency of the worksheet to demonstrate the procedure to the class.

Activity #6:

Prepare "Snack by the Hundreds". The recipe suggestion is included on another page. Duplicate for students to take home or to include in their notebooks.

LESSON 1

B - RIGHT IDEAS

(Information Sheet)

GAINING IS A REAL PLUS

A weight gain of 24-30 lbs.......that sounds like a lot to add just to produce a healthy 7 or 8 lb. baby! But, you must remember that parts of your body are increasing to help produce that healthy baby: your breasts and uterus must gain about 3 lbs.; the placenta (afterbirth) weighs about 1 1/2 lbs.; increased blood, fluids, and body stores account for another 12 lbs. Now add the baby's weight, and 24 lbs. isn't so unreasonable, is it?

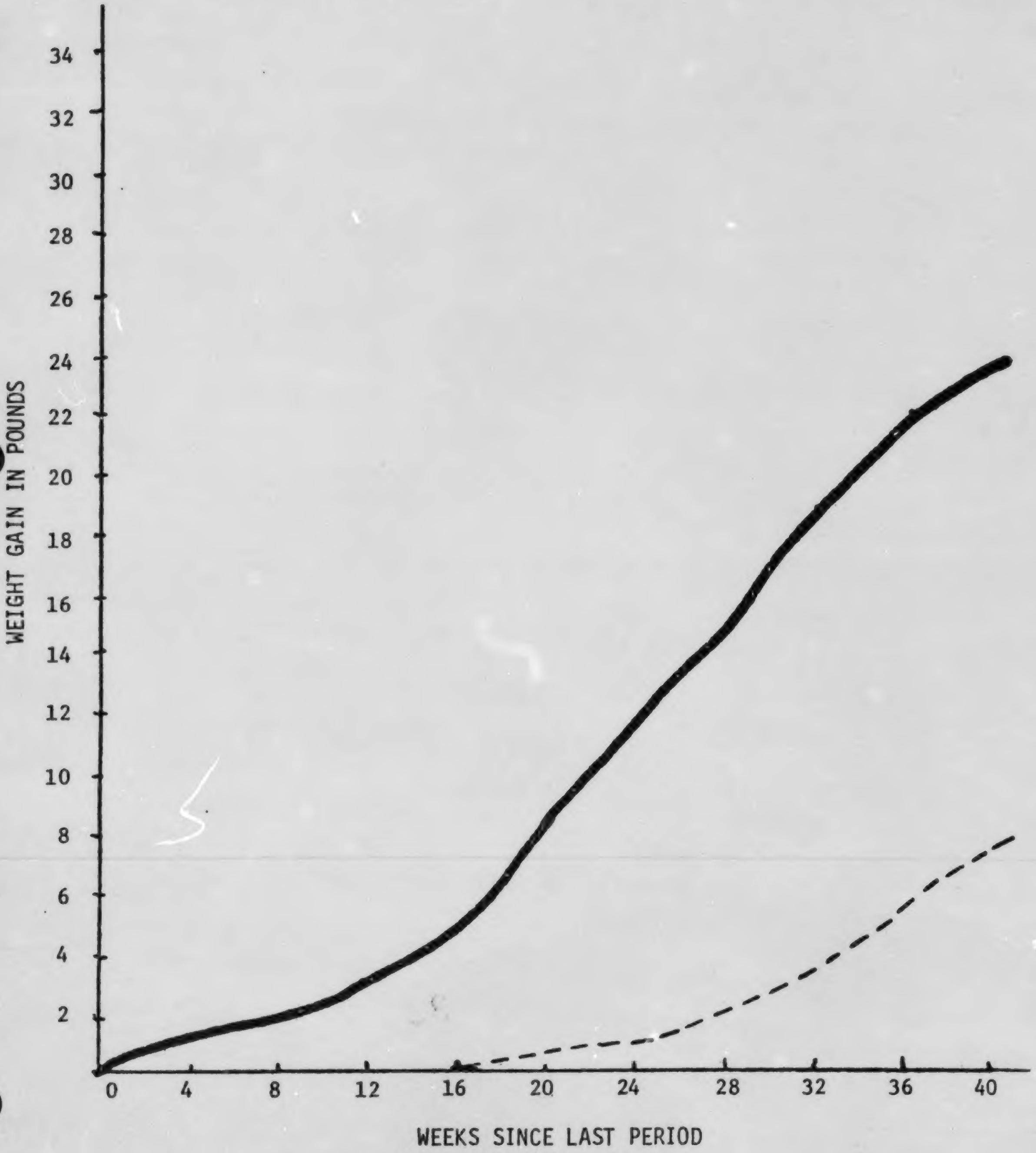
The 2-4 lbs. gained during the first three months represents an increase in your uterus and in your blood supply to nourish the growing tissues. Then during the second three months, your body lays down stores (including fat for later nursing). Finally, during the third three months, the developing baby grows rapidly. To maintain a weight gain of about 3/4 to 1 lb. a week during the last 6 or 7 months, you need to eat about 300 extra Calories a day throughout pregnancy. The extra need can be got in various ways with many combinations of nutritious foods. How about 2 extra glasses of whole milk, or a snack of cheese, fruit and crackers, before bed?

While the baby is developing, your body must also continue to grow, if you have not yet reached your adult height and weight.......or your body must be maintained in a healthy condition, if you have already reached adult size. Inadequate amounts of nutritious food during pregnancy can be a contributing cause to several complications of pregnancy. There is an increased risk of the following: toxemia, premature birth, prolonged and difficult labor, anemia, an underweight baby, and mother and/or infant death. Because a low weight gain during pregnancy can be so dangerous for both mother and baby, doctors now say that it is not safe to try to lose weight during pregnancy.......better to save the dieting until pregnancy and nursing are over. Most of the extra weight is lost by about 3 months post partum (after the birth); and, nursing itself is an excellent way to use up some of the extra stores laid down during pregnancy.

THE PUZZLE PAGE

(Worksheet)

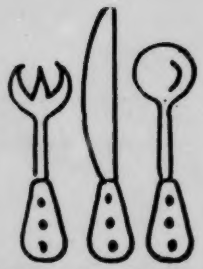
This graph shows the amount of weight gain during the course of an "average" pregnancy. Each time you are weighed, plot your current weight with respect to how far along your pregnancy is; compare it with the "average" pregnancy which produces a 7 1/2 lb. "average" baby.



——— TOTAL WEIGHT GAIN (MOTHER AND BABY)
- - - - - BABY'S WEIGHT GAIN

The difference between the two represents the added maternal tissue, fluids, stores, and placenta.

LESSON 1



RECIPE PAGE

Snack by the Hundreds

Equipment needed: container to mix orange juice
(if using frozen concentrate)
large spoon or whisk
toaster or toaster oven
table knives
large, sharp knife (optional)
cups or glasses
paper plates or napkins

Ingredients: orange juice, canned or frozen concentrate
(fresh-squeezed would be nice, if possible)
whole wheat or enriched toaster waffles
sliced cheese, several varieties if desired

Instructions: Mix up orange juice (or squeeze) if necessary. Pour each student a 6-ounce serving (3/4 cup).

Toast waffles in a toaster. Place a slice of cheese between two waffles; cut "sandwich" in halves.

100 Calorie snack = 6 ounces of orange juice
200 Calorie snack = 1/2 of a waffle sandwich
300 Calorie snack = 6 ounces of orange juice
and 1/2 of a waffle sandwich

LESSON 2

THE FOODS WITH GROW - POWER

(Protein)

FOCUS

Pregnant teenagers should increase their protein intake because protein is necessary for the growth of the baby. Extra protein is needed during nursing to produce milk and the tissues that produce the milk. Foods that supply protein come from both animal and plant sources; two or more protein foods may be combined to contribute protein of higher quality to the diet.

OBJECTIVES

The student will be able to:

1. recognize that protein cannot be stored in the body and should be eaten every day.
2. identify four sources of animal protein and three sources of vegetable protein.
3. list three combinations of complementary vegetable or animal-vegetable protein foods.
4. explain that protein is needed in pregnancy for the growth of the baby's tissues and in nursing to produce milk.

TEACHER'S NOTES

The pregnant teenager needs to increase her protein intake from about 45 grams a day to about 75 grams a day. The increased need is due to the rapid growth of the baby, the development of the placenta, enlargement of maternal tissue, increased maternal blood volume, formation of amniotic fluid, and storage of reserves in the maternal tissue. The protein requirement is also increased in lactation to about 65 grams total per day due to the production of milk and maintenance of milk-producing tissues. Since protein cannot be stored in the body, daily intake is a must; it is best utilized if protein is eaten throughout the day.

Protein is composed of amino acids, some of which the body cannot produce. These "indispensible" amino acids are found in higher proportion in animal products; lower quality protein, such as found in plant products, contains a smaller proportion of indispensible amino acids. With careful balancing of lower quality proteins by combining plant foods, it is possible to approach a higher quality protein. Likewise, the combination of animal proteins with plant proteins increases the protein quality.

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Nutrition Source Book. Rosemont, Illinois: National Dairy Council, 1978.

Robertson, Laurel; Flinders, Carol; and Godfrey, Bronwen. Laurel's Kitchen: A Handbook for Vegetarian Cookery and Nutrition. Berkeley, California: Nilgiri Press, 1976.

Worthington-Roberts, Bonnie S.; Vermeersch, Joyce; and Williams, Sue Rodwell. Nutrition in Pregnancy and Lactation. 2nd ed. St. Louis: The C. V. Mosby Company, 1981.

INFORMATION HANDOUT

Duplicate and distribute "B-RIGHT IDEAS" to the students. Read over the handout with the class or individual student to emphasize particular points and answer questions.

WORKSHEET

Duplicate "THE PUZZLE PAGE" and use as in-class exercise or as a take-home exercise. See Activity #4. If sent home encourage the student to seek the help of others in the family or living group.

SUGGESTED ACTIVITIES

Related Activities in other lessons:
Lesson A-4,
- Activity #1: identifying animal or vegetable proteins
- Activity #2: keeping a protein log
- Activity #3: exploring "unusual" kinds of protein such as nuts, seeds, and their products
- Activity #4: worksheet on finding protein foods in a hidden word puzzle, with fill-in clues
- Activity #5: Food preparation: using animal and plant protein foods

Activity #1:

Preparation:
Collect samples of several items in each category of legumes, seeds, and nuts. These food items may be unfamiliar to some of the students. Ethnic stores or natural food stores usually have such foods in bulk, and might be willing to donate samples. It would also be appropriate to have at least one sample in a form that the students could taste

(kidney bean salad, roasted sunflower seeds, walnuts). Suggestions for each category follows:
Legumes: black beans, black-eyed peas, garbanzos, Great Northern beans, kidney beans, lima beans, navy beans, pea beans, pinto beans, red or pink beans, green or yellow dry peas, split peas, lentils, peanuts
Seeds: pumpkin, sunflower, sesame
Nuts: cashews, walnuts, pistachio nuts, Brazil nuts, pine nuts, pecans, almonds, filberts

Activity:
Suggest that the students taste one product in each group. Have them make a list of the various foods and ask them each to return with one recipe using one food from each category. Emphasize that the recipe should be one which they would eat and suggest that they search out recipes from friends or family. Have the students collect the recipes into a form that could be duplicated and placed into their notebooks.

Activity #2:

Preparation:
Duplicate several copies of the "Mini-Food Composition Table" in Appendix B, so that several students may share a copy.

Activity #2 (continued)

Activity:

Using the foods in the table, have the students suggest different ways that they could add the 30 grams of protein to their daily food intake (above the 45 grams recommended when not pregnant). Give them categories such as divided between two snacks, added to a 3-meal-a-day diet, divided between lunch and dinner, added to a sack lunch and a late afternoon snack, etc. If more complete food composition information is desired, refer to either of Catherine Adams' publication in the resource list.

Activity #3:

Have the students keep a log of several days of the protein foods that they have consumed. With the help of the Mini Food Composition Table in Appendix B or a more extensive table (see Catherine Adams' publications in the resource list) or a college nutrition text, have each student estimate her daily protein intake. Ask each student to evaluate her intake as to amount. The recommended intake for a pregnant teenager is 75 grams a day; anything less may be a caution sign that the diet could be improved; anything more may mean that protein is being wasted by being used for energy instead of growth and maintenance.

Activity #4:

Duplicate and distribute the worksheet (THE PUZZLE PAGE). Ask each student to involve other members "at home", if possible, to suggest appropriate combinations that are in use in the home. Have the students share answers and pick one or two simple ideas to try as an in-class preparation. Explore the possibility of inviting the person from home to help in the preparation of his/her recipe with the class.

Activity #5:

Prepare either "Bagel Pizzas" (animal protein + grains) or "Appetizing Bean Dip" (animal protein + legumes). If the dip is served with tortilla chips, it represents a "three-way" complement (animal protein + legumes + grains). The recipes are on a separate page in this lesson so that they may be duplicated and included in the student's notebook.

.... GIGGLES ....

Why did the fisherman take two aspirins?
.....because he got a haddock.

There's a rumor around the zoo that all the monkeys are going on strike.
They're tired of working for peanuts.

LESSON 2

B - RIGHT IDEAS

(Information Sheet)

PROTEIN: THE FOODS WITH GROW-POWER

Pregnancy is a special time in your life when you need extra protein; it is needed for growth of new tissues (for you and your baby) and for repair of your body cells. Later, if you nurse your baby, the milk will be made partially from protein in the foods you eat. Some nutrients can be stored; protein cannot, so protein foods should be eaten every day. In addition, your body can best use protein if it is supplied every few hours such as at each meal or snack.

Protein is similar to a piece of link chain; each link is a chemical called an amino acid. Some of these amino acids, or links, cannot be made in your body--these are "indispensible"; those amino acids which the body can make do not have to be supplied to the body already formed. Animal protein (such as beef, fish, seafoods, lamb, pork, poultry, organ meats, veal, eggs, milk) has a better proportion of the indispensible amino acids than does vegetable protein (beans, nuts, nut butters, seeds, soy products). Thus animal foods are considered higher quality protein; and, vegetable (plant) foods are considered lower quality protein.

Fortunately, different incomplete protein foods can be combined at the same meal to approach the quality of some of the complete proteins. Some "complementary combinations" and examples to remember are:

1. Grains + Legumes	wheat bread and baked beans corn tortilla and beans bread made with soy-corn or wheat-soy flours
2. Legumes + Seeds	roasted soybean and sunflower seed snack peanut butter on sunflower seed bread

Likewise, complete proteins can be used to "complement" the missing amino acids in incomplete proteins. Some combinations and examples are:

1. Animal protein + Grain	beef taco milk and breakfast cereal cheese (and beef) pizza cheese and macaroni casserole
2. Animal protein + Legumes	chili beans with beef ham and split pea soup

Besides tasting good and providing higher quality protein for you and your baby, "combination cooking" is usually cheaper than relying on meat as your main source of protein.

LESSON 2

THE PUZZLE PAGE

(Worksheet)

You are learning how different proteins "complement" each other and how they can be combined to produce a more nutritious food for you and your growing baby. Now it's your turn to think up some interesting combinations. Below are four ways of combining protein foods to improve their usefulness in your body. Can you suggest a food or combination of foods for each of the meals listed? Refer to the Handout, but try to use examples not listed there...be as inventive as you wish. Just remember that the suggestions should be something that you would willingly eat!

1. Animal protein + Grains
   Breakfast ____________________
   Lunch ____________________
   Dinner ____________________
   Snack ____________________

2. Animal protein + Legumes
   Breakfast ____________________
   Lunch ____________________
   Dinner ____________________
   Snack ____________________

3. Grains + Legumes
   Breakfast ____________________
   Lunch or Dinner ____________________
   Snack ____________________

4. Legumes + Seeds
   Lunch ____________________
   Snack ____________________

.... GIGGLES ....

Can you read this? FUNEM? SVFM. FUNEX? SVFX. OKMNX!

Answer: Have you any ham? Yes, we have ham. Have you any eggs?
Yes, we have eggs. Okay, Ham and Eggs? (Try it with a German accent.)

LESSON 2

SUGGESTED ANSWERS FOR WORKSHEET **

1. Breakfast: milk and breakfast cereal
flavored yogurt and whole grain muffin or toast
scrambled eggs and whole wheat toast
cheese pizza (yes, for breakfast!)

Lunch: cheese and whole wheat crackers
hamburger or cheeseburger
beef or cheese taco

Dinner: spaghetti with meat sauce and cheese
beef or cheese enchiladas
Chinese meat dish with rice
cheese omelet

Snack: cheese and crackers
hot dog and bun

2. Breakfast: split pea soup made with milk
peanut butter "milk shake"

Lunch: ham and split pea soup
chili with meat and beans
peanut butter sandwich with glass of milk
kidney bean and tuna salad

Dinner: baked beans with ham or pork
bean soup with meat
taco and refried beans

Snack: bean and cheese dip with crackers

3. Breakfast: whole wheat toast with peanut butter
toast made with corn/soy or wheat/soy flours
(this may be unfamiliar to most students)

Lunch or Dinner: corn tortilla and beans
baked beans and corn bread
whole wheat muffins and lentil or split pea soup

Snack: corn-nuts and peanuts

4. Lunch: peanut butter on sunflower seed bread
pumpkin seeds sprinkled on navy bean soup
fresh fruit salad sprinkled with chopped peanuts and sesame seeds

Snack: roasted soy bean "nuts" and sunflower seeds

** These are only a few of the possibilities. Refer to Diet for a Small Planet or Recipes for a Small Planet for many more.

LESSON 2

RECIPE PAGE

Bagel Pizzas

Equipment needed:
- knife
- baking sheet
- large spoons and spatula
- grater for cheese
- oven
- paper plates for serving

Ingredients:
- 6 whole bagels, sliced (whole wheat or enriched)
- 1 jar (8-12 oz.) spaghetti sauce or homemade sauce (with or without meat)
- 1 lb. Mozzarella cheese

Instructions: Shred the cheese. Place each bagel half, split-end up, on a large baking sheet. Cover each half with 1-2 Tbsp. of the sauce. (Missing the hole is a trick!) Divide the shredded cheese evenly over the twelve halves.

Heat oven to 325°F. Bake the pizzas about 15 minutes, until the bagel is well-heated and the cheese is bubbly. Eat immediately or cool quickly for storage. Each bagel pizza is about 260 Calories.

Suggestions: These reheat well and could be frozen before or after the initial heating.

Appetizing Bean Dip *

Equipment needed:
- grater for cheese
- sharp knife
- stove
- mixing spoon
- measuring cup and spoons
- sauce pan
- candle warmer (optional)

Ingredients:
- 1 can (1 lb.) refried beans (check Mexican food section of supermarket)
- 1 cup (1/4 lb.) shredded Cheddar cheese
- 1/2 cup chopped green onion, including tops
- 2-3 Tbsp. taco sauce (optional)

Instructions: Shred the cheese and chop the green onions. Mix all ingredients in the sauce pan; warm over low heat, mixing well. Keep warm over very low heat on the stove or over a candle warmer.

Serve with some type of "dipper": corn chips, tortilla chips, whole wheat bread cubes, crisp vegetable slices.

This recipe makes about 3 cups of dip. Each 1/2 cup is about 185 Calories.

* revised from: Sunset's Mexican Cook Book, Lane Books, Menlo Park, CA

LESSON 3

CAL C. YUM, CONSTRUCTION COMPANY, BONE - BUILDERS

(Calcium Need and Intake During Pregnancy)

FOCUS

Pregnant teenagers should increase their calcium intake throughout pregnancy to support the growth of bone and teeth in the developing baby. Milk and milk products are excellent sources of calcium, but other non-milk sources do exist.

OBJECTIVES

The student will be able to:

1. recognize that at least five servings of calcium-rich foods are recommended daily for the pregnant adolescent.
2. recognize two foods other than milk and milk products that are good sources of calcium.
3. recognize that calcium is important for the proper growth of bones and teeth in the developing baby and for the maintenance of healthy bones in the mother.

TEACHER'S NOTES

The pregnant teenager has the highest requirement for the mineral calcium of any age group. Calcium is needed by both the pregnant teenager and her developing baby for proper bone growth (or maintenance, if the teenager is no longer herself growing) and by the baby for proper tooth development. Calcium is also important in blood clotting and in maintaining healthy nerves and muscles.

Thus, the recommended intake for the pregnant teenager (18 years and younger) is 1600 mg. a day--a need which can be met by five servings from the milk and cheese group (see Lesson A-3, Appendix A). For those who cannot (i.e., lactose intolerance) or will not use milk, other dairy and non-dairy sources of calcium are available.

REFERENCES

Luke, Barbara. Maternal Nutrition. (Chapter 6: Lactose Intolerance during Pregnancy, Significance and Solutions). Boston: Little, Brown and Company, 1979.

Nutrition Source Book. Rosemont, Illinois: National Dairy Council, 1978.

Stern, Judith S., and Denenberg, R. V. How to Stay Slim and Healthy on the Fast Food Diet. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1980.

Worthington-Roberts, Bonnie S.; Vermeersch, Joyce; and Williams, Sue Rodwell. Nutrition in Pregnancy and Lactation. 2nd ed. St. Louis: The C. V. Mosby Company, 1981.

INFORMATION HANDOUT

Duplicate and distribute "B-RIGHT IDEAS" to students. Read over the handout with the class or individual student to emphasize particular points and answer questions.

WORKSHEET

Duplicate "THE PUZZLE PAGE" and use as an in-class exercise or as a take-home exercise. If sent home, encourage the student to seek the help of others in the family or living group.

SUGGESTED ACTIVITIES

Related Activities in other lessons:
- Lesson A-3,
  - Activity #1: identification of calcium-rich dairy foods
  - Activity #2: calcium for those who can't or won't drink milk
  - Activity #3: worksheet on likes and dislikes of dairy foods
  - Activity #4: food preparations--yogurt or cottage cheese fruit parfaits

Activity #1: "Taste Testing"

Preparation:
This activity requires refrigeration facilities or a large ice chest. Bring in several kinds of milk: whole milk, skim or reconstituted non-fat dry milk, reconstituted evaporated milk, or mix of 1/2 whole and 1/2 non-fat milk. Provide small paper cups (3 oz. size) for each student to taste each milk. All milks should be well-chilled.

Activity:
Tell the students that they will be a taste panel. Have each taste the milks in random order, without knowing which milk is which.

Activity #1 (continued)

A blindfold might add some mystery to the tasting. Have them identify which milk they are tasting.

After all the students have tasted and rated, present the correct answers. From the prices on each milk, calculate with (or for) the students which milk is the least expensive per serving (such as an 8-ounce glass).

Explore with the students which milk(s) they prefer and why. Also ask the students to suggest ways of including the various milks in their diets.

Activity #2: "Let's Amend the Menu"

Preparation:
Obtain from the food service office a weekly menu for the school breakfast or school lunch program for the junior and/or senior high schools. Duplicate the menus for the students. If desired, also duplicate a few copies of the "Mini Food Composition Table" in Appendix B for reference concerning calcium contents in foods.

Activity:
Pass out the menu (and Mini Food Table) to the students. Have them discuss suggestions for additions or substitutions for each meal which would increase the calcium content. Encourage answers other than just "drink more milk".

Activity #3: "Calcium Away from Home"

Preparation:

Obtain copies of fast-food or regular restaurant menus. Students could copy the fast-food menus; regular restaurant owners might give you old, out-dated menus for free.

Activity:

Pass out the menus or copies. Ask the students to identify all the foods which contain calcium. Using the same menu, have each student choose a breakfast, lunch, snack, or dinner which contains a food from each of the four food groups (refer to information sheets in Lessons A-1 through A-4 in Appendix A, if necessary).

Secondarily, have the students prepare similar menus to contain two servings from the milk group, as well as one each from the other three groups.

The Stern/Denenberg book on fast-foods may be of some help.

Activity #4: "Milk Alternatives"

Preparation:

This activity would be especially appropriate for Black or Oriental students, or any students who cannot tolerate milk or do not like to drink milk.

Prepare a short summary about lactose intolerance (see Maternal Nutrition, Luke, or an introductory nutrition text book). These facts may help:

Activity #4 (continued)

1. the problem is due to a genetic (in-born) error
2. affects about 80% of the world's population
3. affects individuals whose ancestors are African, Greek, Orientals...mainly those who didn't rely on milk as a food after infancy
4. appears around 4 years of age (sometimes later)
5. causes nausea, diarrhea, discomfort when milk (in various amounts) is drunk
6. affected individuals cannot digest the sugar (lactose) in milk because they lack an enzyme (lactase)

Activity:

Present the students with the summary (written, on board, or oral). Discuss the syndrome with them. Emphasize that milk is an excellent source of calcium, but cannot be handled by all people and that other sources available. Sometimes the syndrome is not as severe with different kinds of milk.

Cheeses and yogurt can be tolerated by some who cannot drink milk. Alternatively other non-milk products have a fair amount of calcium (fish eaten with the bones and some greens...see Lesson A-1, Activity #4, and Lesson A-3, Activity #2).

Have each of the students write a menu which contains one non-milk (i.e., don't use fluid or reconstituted milk) source of calcium.

If some of the students experience lactose intolerance, have them share their feelings with the class, if they want to.

Activity #5:

Prepare (in class, if possible) the "Cheese Party Tray". The directions for preparation are on a separate sheet of paper.

Activity #5 (continued)

Serve as a snack. Encourage the students to try some of the cheeses that they are not familiar with. Perhaps, you might prepare "voting cards", so that the students can record their likes and dislikes, and later include their preferences and the serving ideas in their notebooks.

..........GIGGLES..........

Knock, Knock.
Who's there?
Ice cream.
Ice cream, who:
Ice cream when you step on my foot!!

"Be Bone".......what everyone from Mississippi has done once.

Q: Why did you buy collard greens?
A: Because I didn't want them to run way.

LESSON 3

B - RIGHT IDEAS

(Information Sheet)

CALCIUM NEEDS DURING PREGNANCY

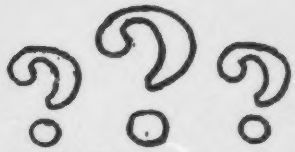
Growing a healthy baby is much like building a well-constructed house. The correct materials must be available at the correct times. One of the most important "building blocks" of the baby's body is the mineral calcium. Calcium is needed by both the pregnant teenager and her developing baby all throughout pregnancy for proper bone growth (or maintenance, if the teenager is no longer herself growing) and by the baby for proper tooth development before birth. Calcium is also important in blood clotting and is necessary for healthy nerves and muscles in both mother and baby. Thus the pregnant teenager has the highest requirement for calcium (1600 milligrams a day) of any age group.

Milk and milk products (such as cheese, cottage cheese, yogurt, ice cream, and ice milk) are the main source of calcium in the United States. However, some individuals cannot tolerate milk because they lack the ability to use the sugar (lactose) in milk. These people get nausea and diarrhea if they drink it; most often this problem (lactose intolerance) appears sometime after 2-3 years of age in individuals whose ancestors came from such places as Africa, Greece, and the Orient. Some of these people can eat fermented milk products such as cheese and yogurt; but, some can not eat much of even these products. Thus they must rely on dark-green vegetables (such as collards, kale, dandelion greens, and turnip greens) and fish with edible bones (such as salmon or sardines) for their calcium.

The pregnant teenager should increase her intake of calcium-rich foods to 5 servings each day to insure strong bones and teeth for her developing baby and to maintain her own bones during pregnancy.

LESSON 3

THE PUZZLE PAGE
(HET ZUZPEL GEPA)



(Worksheet)

Below is a list of calcium-rich foods, but they are all jumbled up. Can you unscramble them? You might want to try this with someone else in the class to see who can do it the quickest. The more difficult ones have clues.

After you have unjumbled the words, write down the way that you like the food if you have tried the food. Put a star (*) by those foods that you haven't tried and would like to try.

1. CEI MEARC ____________________
2. LKIM ____________________
3. YOTGRU ____________________
4. SCHEEE ____________________
5. EIC KLMI ____________________
6. TTAOGEC ESEEHC ____________________
7. IKRTULMETB (starts with "B") ____________________
8. COOLCHTETA LIMK ("brown cow") ____________________
9. LLODRSAC ("greeny") ____________________
10. LAEK ____________________
11. TSRADMU SGRNEE (two colors) ____________________
12. NRTUPI GNEERS (not turned down) ____________________
13. NOILDNADE RGNEES (a weed) ____________________
14. LMASNO with NOBSE ____________________
15. DARINESS (little fish) ____________________

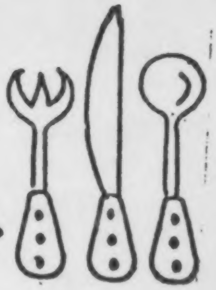
LESSON 3

ANSWERS TO "THE PUZZLE PAGE"

1. ice cream
2. milk
3. yogurt
4. cheese
5. ice milk
6. cottage cheese
7. buttermilk
8. chocolate milk
9. collards
10. kale
11. mustard greens
12. turnip greens
13. dandelion greens
14. salmon with bones
15. sardines

LESSON 3

RECIPE PAGE



Cheese Party Tray

Equipment needed:
sharp knife
toothpicks
cutting board
small plates, for serving
large platter (optional)

Ingredients: Select several kinds of cheeses from the following list, allowing about 2-3 ounces total for each student:

Gouda
Swiss
Cheddar (mild)
Farmer's cheese
Brick
Colby
Monterey Jack
Processed American or other mild processed cheese

Instructions: Remove covering, if necessary, and cube into bite-sized chunks. Have a supply of toothpicks available. Serve cheese cubes on a tray or platter, with the labels, if desired.

Suggestions: Refer to Completely Cheese by Anita May Pearl for an interesting coverage of the history of cheese in general and for information about almost every kind of cheese produced.

LESSON 4

REMEMBER ZIIS FOR ZEST AND ZIP

(Minerals During Pregnancy)

FOCUS

Several minerals (iron, iodine, zinc, sodium) are important during pregnancy because each plays a special role in the growth of the developing baby. Several foods can be identified as good sources of each mineral.

OBJECTIVES

The student will be able to:

1. recognize that sodium (for example, in table salt) restriction or the use of water pills (diuretics) is not recommended during pregnancy because sodium is needed in greater amounts by both the mother and the developing baby.
2. identify iron as a mineral necessary during pregnancy to produce the baby's blood and to increase the amount of the mother's blood and list two good food sources of iron.
3. identify iodine as a mineral necessary during pregnancy to help both the mother and the developing baby use energy in the proper way and list two good food sources of iodine.
4. identify zinc as a mineral necessary during pregnancy for the growth of the baby's nerves and skeleton and list two good food sources of zinc.

TEACHER'S NOTES

Sodium, iron, iodine, and zinc are all important minerals for the pregnant teenager. "ZIIS" is simply a mnemonic device for remembering zinc, iron, iodine, and sodium.

Sodium (i.e., as in table salt, baking soda, baking powder, monosodium glutamate) restriction is no longer thought to be appropriate in pregnancy since extra sodium is needed to maintain the balance of normal extra fluid retention. In addition, diuretics (water pills) are not advisable. There is little danger of sodium deficiency in the U. S. diet, so obtaining the recommended 2-3 grams (about 1 teaspoon, by weight, of table salt which is a combination of sodium and chlorine) a day is not difficult.

Iron is found in red meats (especially organ meats), dried peas and beans, whole grains, and some fruits (such as prunes and raisins). Vitamin C enhances the absorption of some forms of iron: a glass of orange juice would help increase the absorption of the iron in whole grain bread.

Additional iron is required in pregnancy. Therefore, an iron supplement is usually prescribed in pregnancy to insure an adequate intake for the necessary formation of new red blood cells (which carry oxygen) in the greatly expanded blood volume of mother and baby.

Zinc and iodine are two trace minerals which play especial roles in pregnancy. Zinc, found in whole grain products, liver, meat, eggs, and shellfish, is necessary for proper development of the baby's nerves and skeleton. Iodine, supplied in iodized salt and found in seafoods and plant products grown on iodine-rich soils, is a component of the hormones from the thyroid gland. Thus, iodine helps control growth of both the mother and the developing baby.

REFERENCES

Katt, Sally, ed. "What's to Eat?" and Other Questions Kids Ask About Food. Yearbook of Agriculture, 1979. Washington, D.C.: U. S. Government Printing Office, 1979.

Nutrition Source Book. Rosemont, Illinois: National Dairy Council, 1978.

Worthington-Roberts, Bonnie S.; Vermeersch, Joyce; and Williams, Sue Rodwell. Nutrition in Pregnancy and Lactation. 2nd ed. St. Louis: The C. V. Mosby Company, 1981.

INFORMATION HANDOUT

Duplicate and distribute "B-RIGHT IDEAS" to students. Read over the handout with the class or individual student to emphasize particular points and to answer questions.

WORKSHEET

Duplicate "THE PUZZLE PAGE" and use as an in-class exercise or as a take-home exercise. See Activity #4 for use in a group exercise. If sent home, suggest that the student seek help from other members of the family or living group.

SUGGESTED ACTIVITIES

Activity #1:

Using the food suggestions in the information handout, have the students bring in pictures from magazines to represent sources of sodium, iron, zinc, and iodine. Prepare a "ZIIS" poster for use in later classes, or prepare several sheets of pictures (maybe one for each mineral) for the students to include in their notebooks.

Activity #2: "The Whole is More Nutritious than the Parts"

Preparation:
Duplicate several copies of the "Mini Food Composition Table" in Appendix B, for the students to share.

Activity #2 (continued)

Activity:
This activity is to emphasize that vitamin C enhances the absorption (the body's ability to use) iron; write "IRON" and VITAMIN C" on the board. Ask the class for suggestions of iron-rich foods and vitamin C-rich foods. Have them refer to the mini table, if they are not certain if the food is really iron- or vitamin C-rich. The students may want to copy these lists in their notebooks.

Next, have the students suggest single dishes or combinations of foods that they could eat, which are iron- and vitamin C-rich. Some ideas include tomatoes on a sandwich made with whole wheat bread, fruit salad with cantaloup (or oranges) and raisins, hamburger with tomato slices, broccoli with some sort of red (or organ) meat, orange juice with whole grain muffin.

Activity #3: "Salt, Salt, Everywhere"

(Sodium should not be restricted during pregnancy, unless by a physician's direction. However, this activity is aimed at making the student aware of the many and varied sources of sodium in the U. S. diet.)

Ask the students to write down (or list on the board) the kinds of food that are high in salt (sodium). Suggestions for categories follow: (from "What's to Eat?", USDA)

1. Foods prepared in brines, such as pickles, olives, sauerkraut.
2. Salty or smoked meats, such as bologna, corned beef, weiners, ham, lunch meats, sausage, salt pork, smoked tongue.
3. Salty or smoked fish, such as anchovies, caviar, herring, sardines, smoked salmon.
4. Snack items, such as potato chips, pretzels, salted popcorn, salted nuts and crackers.
5. Bouillon cubes, seasoned salts, soy sauce, Worcestershire and barbeque sauces.
6. Cheeses, especially processed ones.
7. Canned and instant soups; meals-in-a-cup.
8. Prepared catsup, mustard, and horseradish.
9. Artifically sweetened soft drinks.

Emphasize that "sodium" has many different "names": soda, sodium, Na, sodium bicarbonate, baking soda, monosodium glutamate, most baking powders, disodium phosphate, sodium alginate, sodium benzoate, sodium hydroxide, sodium propionate, sodium sulfite, sodium saccharin.

For a homework assignment, ask the students to examine labels on products that they have in the home and make a list to share with the

Activity #3 (continued)

class of the products which they found. They could also be encouraged to bring in appropriate labels.

Activity #4:

Prepare a transparency of the worksheet and do it as a group in class. You might want to try the puzzle without reference to the handout to see how much the class already may know; then, distribute the information handout (B-RIGHT IDEAS) to "fill-in" those items which the students had trouble with.

Activity #5: "C and Iron Combination"

Preparation:
Duplicate the recipe sheet from Lesson 9. Refer to Activity #8 of that lesson, also.

Activity:
Have the students prepare the P.B.R.'s for an in-class snack. Ask them to suggest substitutions in the recipe which would leave the iron and vitamin C content high. Suggestions could include whole wheat waffles for the bread, whole wheat muffins for the bread, snipped dates or prunes for the raisins, grapefruit or fortified fruit juice (not drink), or sandwich with peanut butter, orange slices, and raisins.

Activity #6:

Prepare Zesty ZIIS Bread before class or as an in-class exercise, if food preparation facilities are available. The recipe is on a separate sheet of paper. Have the students identify the sources of iron (whole wheat flour, raisins), sodium (salt, baking powder, baking soda), zinc (egg, whole wheat flour), and iodine (iodized salt) from a copy of the recipe, or from the recipe while preparing it. Duplicate the recipe for each student to include in her notebook or to share with those at home.

LESSON 4

B - RIGHT IDEAS

(Information Sheet)

"ZIIS" FOODS

Iron, zinc, iodine and sodium are four minerals that play special roles in the growth of your developing baby. Thus in a word to help you remember them: "ZIIS" from the first letters of each word.

You need iron during pregnancy to produce the extra red blood cells that are formed to carry oxygen to both you and the baby. Red meats are a main source of iron, but dried peas and beans, and some dried fruits (raisins, prunes) also contain some iron. If you combine an iron-rich food with a vitamin C food (oranges, strawberries, broccoli, etc.) your body absorbs more of the iron. Your doctor may also prescribe iron supplements as added protection against anemia (low number of red blood cells).

Sodium is "everywhere" in the American diet, so you will have no trouble getting enough. It is present in table salt, baking soda or powder, and many food additives, as well as occurring naturally in most foods. Sodium is necessary to balance the normal amount of extra fluid retained during pregnancy. For this reason, water pills (diuretics) should not be used to remove sodium from the body during pregnancy.

Zinc and iodine are trace minerals (needed in tiny amounts) which are also important to you and your growing baby. Zinc helps your baby's bones and nerves develop properly. It is found in whole grain products, liver, meat, eggs, and shellfish (crabs, clams). Your body uses iodine to regulate the rate of growth of both your body and that of your developing baby. Iodized salt is an excellent and convenient source of iodine, but it is also found in seafoods or in plants grown on iodine-rich soils.

..........GIGGLES..........

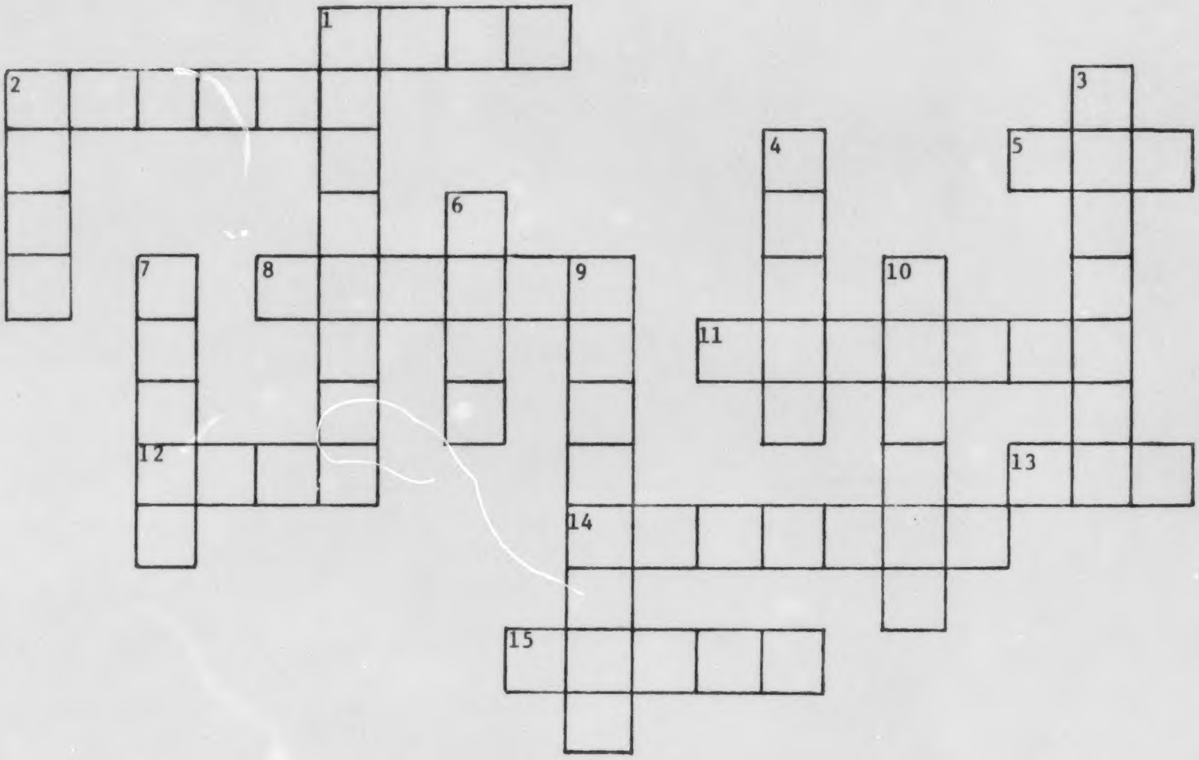
Knock, knock!
Who's there?
Iodine.
Iodine, who?
Iodine, ah, fifty cents.

Teacher: Name two good sources of zinc.
Student: The kitchen zinc and the bathroom zinc.

LESSON 4

THE PUZZLE PAGE

(Worksheet)



Directions: Complete the following paragraphs to find the words for the crossword puzzle.

Iron, zinc, (2 across) , and sodium are very important (9 down) in pregnancy. (2 down) is needed to produce red (15 across) cells. Good food sources are (13 across) meat, organ meats such as (7 down) , dried beans and peas, and fruits like (14 across) and prunes. Your body can absorb iron from your diet better if (11 across) C-rich foods are eaten with the iron-rich foods.

(8 across) is needed to maintain water (3 down) in the extra fluids normally gained in pregnancy. The most common source of sodium in the U. S. diet is table (1 across) . (10 down) powder also contains sodium.

(6 down) is important for your baby's bones and muscles and can be found in (12 across) and whole (4 down) foods. Iodine can be found in iodized salt and in (1 down) . You and your baby need small amounts of iodine to regulate your (5 across) of growth.

LESSON 4

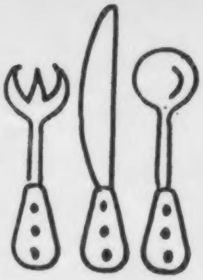
ANSWERS TO CROSSWORD PUZZLE

Iron, zinc, iodine, and sodium are very important minerals in pregnancy. Iron is needed to produce red blood cells. Good food sources are red meat, organ meats such as liver, dried beans and peas, and fruits like raisins and prunes. Your body can absorb iron from your diet better if vitamin C-rich foods are eaten with the iron-rich foods.

Sodium is needed to maintain water balance in the extra fluids normally gained in pregnancy. The most common source of sodium in the U. S. diet is table salt. Baking powder also contains sodium.

Zinc is important for your baby's bones and muscles and can be found in eggs and whole grain foods. Iodine can be found in iodized salt and in seafoods. You and your baby need small amounts of iodine to regulate your rate of growth.

RECIPE PAGE



Zesty ZIIS Bread

(Irish Soda Bread in disguise)

Equipment needed:
large bowls (2)
large mixing spoon(s)
board or space for kneading bread
8" round cake pans (2)
sharp knife
oven
racks for cooling (optional)

Ingredients:
2 cups unsifted enriched white flour
2 cups whole wheat flour
1/2 teaspoon iodized salt
3 teaspoons baking powder
1 teaspoon baking soda
2 cups raisins or currants
1/4 cup honey
1/4 cup vegetable oil
1 egg
1 3/4 cups buttermilk, or whole milk with 1 teaspoon vinegar added to sour the milk
vegetable oil or shortening for greasing pans
butter or margarine

Instructions: Preheat oven to 375°F.

In a large bowl, combine flours, salt, baking powder, and baking soda. Mix. Stir in raisins or currants. In another large bowl, combine honey, oil, egg, and buttermilk. Mix. Add about 2/3 of the flour mixture to the liquid mixture, stirring to make a sticky dough.

Put the rest of the flour mixture on a board. Scoop the dough onto the board. Knead the dough about 2-3 minutes until smooth.

Divide the dough in half, and shape each half into a round loaf.

Grease two 8" cake pans. Place a loaf in each. With a sharp knife, cut about 1/2" deep slits in the loaves in the shape of an "X".

Bake the loaves for about 35-40 minutes in the 375° oven, or until they sound "hollow" when tapped. Remove from pans and cool slightly on the racks. Slice and serve warm with butter or margarine.

LESSON 5

A C D FOLACIN

(Vitamins During Pregnancy)

FOCUS

Several vitamins (A, C, D, and folacin) are particularly important during pregnancy because each plays a special role in the growth of the developing baby. Several foods can be identified as good sources of each vitamin.

OBJECTIVES

The student will be able to:

1. identify vitamin A as necessary for the health of the mother (maintaining skin and internal organs) and for growth of the developing baby's body cells and list three good food sources of vitamin A.
2. identify folacin as a vitamin necessary during pregnancy to prevent anemia (not enough red blood cells) and list three good food sources of folacin.
3. identify vitamin C as important in the growth of the developing baby (bones, skin, and tendons) and list three good food sources of vitamin C.
4. identify vitamin D as necessary for proper bone growth in the developing baby and list two good food sources of vitamin D.
5. recognize that the pregnant teenager needs 2 servings of vitamin C foods each day.

TEACHER'S NOTES

Vitamins A, C, D, and folacin (folate, folic acid) perform various vital functions for the pregnant teenager and her developing baby. Both vitamin A and vitamin D are necessary for proper tooth and bone formation in the fetus and maintenance of the mother's tissues (both soft and bone). Vitamin D helps in the absorption of calcium. Both vitamins are fat-soluble and can be stored in adipose (fat) tissue. Butter, cream, eggs, fortified margarine, and green or yellow vegetables are good sources of vitamin A; vitamin D-rich foods include fortified milk and margarine and fish liver oils.

The human body can itself produce vitamin D from exposure of the skin to the ultraviolet (UV) rays of the sun.

Vitamin C and folacin (one of the B-complex) are water-soluble; thus, both mother and fetus need to have daily sources of these vitamins. Vitamin C is involved with formation of new tissue in general, and is specifically important for developing connective tissues. Vitamin C also improves the absorption of minerals (i.e., iron) from food. Folacin is necessary to prevent one type of anemia (megaloblastic anemia) and also is used in development of new red blood cells (in particular, hemoglobin). Vitamin C-rich foods include citrus fruits and juices, melons, broccoli, green or chili peppers, tomatoes and potatoes. Folacin ("foliage") is found in leafy green vegetables, broccoli, oranges, whole grains, and liver.

Current recommendations for the teenager suggest an increase in vitamin C during pregnancy to two servings daily. Folacin supplements may be prescribed during pregnancy, due to the increased need.

REFERENCES

Elswick, Linda L. Teenage Pregnancy and Nutrition: A Review. Albany, New York: The University of the State of New York, 1980.

Nutrition Source Book. Rosemont, Illinois: National Dairy Council, 1978.

Worthington-Roberts, Bonnie S.; Vermeersch, Joyce; and Williams, Sue Rodwell. Nutrition in Pregnancy and Lactation. 2nd. ed. St. Louis: The C. V. Mosby Company, 1981.

INFORMATION HANDOUT

Duplicate and distribute "B-RIGHT IDEAS" to students. Read over the handout with the class or individual student to emphasize particular points and answer questions.

WORKSHEET

Duplicate "THE PUZZLE PAGE" and use as an in-class exercise or as a take-home exercise. If sent home, encourage the student to seek the help of others in the family or living group.

SUGGESTED ACTIVITIES

Related Activities in other lessons:

- Lesson A-1,
  - Activity #1: vitamin A and vitamin C vegetables, tasting activity
  - Activity #2: vitamin A and vitamin C fruits, tasting activity
  - Activity #5: prepare "Orange Cooler" drink, which is a good source of calcium and vitamin C
  - Activity #6: vitamin A and vitamin C recipes from home
- Lesson 12,
  - Activity #2: vitamin C and folacin content of foods (also includes vitamin E)

Activity #1: "A Full House"

Preparation: Design a deck of ACDFolacin cards: on one side of 3" x 5" cards print (one word or number to a card):

Activity #1 (continued)

Vitamin A	"1"	breakfast
Vitamin C	"2"	lunch
Vitamin D	"3"	dinner
Folacin	"4"	snack

Activity:

Separate the cards into four "vitamin" cards, four "number" cards, and four "meal-time" cards. Have the student pick a card from the number pile without looking. This determines how many cards she may pick from the vitamin pile (without looking). Then have her pick (no peeking!) from the meal-time pile.

She must now suggest a meal for the particular "time" of day picked with source(s) of all the vitamins which she has picked. Use the information handout in this lesson for suggestions of food sources rich in each vitamin. Encourage the students to think of non-traditional meals, such as a hamburger with lettuce and tomatoes for

Activity #1 (continued)

breakfast (folacin and vitamin C) or whole grain waffles with butter and syrup and orange juice for lunch or dinner (vitamin A, vitamin C, and folacin).

Activity #2:

Prepare ACDFolacin Flapjacks; the recipe is on a separate sheet of paper. Duplicate and suggest that the students share the recipe with those at home and report on their acceptance. The recipe contains a source of each vitamin mentioned in this lesson. Have the students identify the sources, while preparing the recipe:

Activity #2 (continued)

Vitamin A:	butter, eggs
Vitamin C:	orange juice
Vitamin D:	fortified milk
Folacin:	whole wheat flour, orange juice

Activity #3:

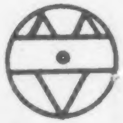
Make a transparency of the worksheet (THE PUZZLE PAGE) and do as an in-class group exercise.

..........GIGGLES..........

Hee: What's another name for twins?
Haw: Former womb mates.

Knock, Knock!
Who's there?
Orange juice.
Orange juice, who?
Orange juice going to have breakfast?

??? Can you identify this???



Answer: A navel orange wearing a bikini.

B - RIGHT IDEAS

(Information Sheet)

A C D FOLACIN FOODS

Several vitamins are important to both you and your growing baby while you are pregnant. Vitamin A helps keep your skin and internal organs healthy, but it is also important for the development of many different kinds of cells in your baby's body. Vitamin A is found in green and dark yellow vegetables, some fruits (apricots, peaches, cantaloup), butter, eggs, and fortified margarine.

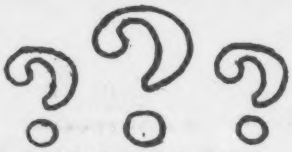
Vitamin C also helps the baby's tissues form, but is particularly important in forming connective tissue. It also helps your body absorb minerals such as iron. Citrus fruits, green peppers, broccoli, tomatoes and potatoes are vitamin C-rich foods.

In order for your baby to grow strong bones and teeth, calcium must be absorbed into your body. Vitamin D helps the body use the calcium in foods. In the U. S., milk and margarine is fortified with vitamin D, so you don't have to take the vitamin D-rich fish liver oils that previous generations of mothers had to swallow (sometimes reluctantly). Sunlight acting on a compound in your skin will also produce vitamin D. Individuals with darker skin need a longer exposure to sunlight than do individuals with lighter skin to produce the same amount of vitamin D.

Folacin is found in leafy green vegetables, broccoli, oranges, whole grains, egg yolks, avocados, legumes, and liver. A type of anemia (not enough red blood cells for both you and your baby) can result if you don't have enough folacin in your diet during pregnancy. Thus, your doctor may prescribe a folacin supplement as added protection for you both.

LESSON 5

THE PUZZLE PAGE



(Worksheet)

The sentences below all contain information about vitamins that are especially important during pregnancy. Can you unscramble these words with the help of the clues?

1. GEGS ______________ and TTERUB ______________ are both animal products which are good sources of vitamin A.

2. Both vitamin A and vitamin D help your developing baby to grow strong EETTH ______________ and SEBNO ______________.

3. BCIROCOL ______________ and RNEEG EPPRES ______________ are both green and excellent sources of vitamin C.

4. SEGRANO ______________ contain both vitamin C and folacin.

5. Folacin helps your body to produce red blood cells and also prevents AAEMNI ______________.

6. LACCMUI ______________ needs vitamin D to be absorbed properly.

7. Vitamin D can be gotten from fortified milk or fish liver oils, but NLITHGSU ______________ on the skin causes the body to produce vitamin D, too.

8. If you drink a glass or orange juice with whole wheat toast, the vitamin C in the orange juice helps your body absorb the RNIO ______________ in the whole wheat.

9. Vitamin A helps your baby's YDOB SELLC ______________ ______________ grow properly.

10. MTSEOAT ______________ and OPTTASEO ______________ (they rhyme) are good sources of vitamin C.

LESSON 5

ANSWERS TO THE WORKSHEET

1. Eggs and butter are both animal products which are good sources of vitamin A.

2. Both vitamin A and vitamin D help your developing baby to grow strong teeth and bones.

3. Broccoli and green peppers are both green and excellent sources of vitamin C.

4. Oranges contain both vitamin C and folacin.

5. Folacin helps your body to produce red blood cells and also prevents anemia.

6. Calcium needs vitamin D to be absorbed properly.

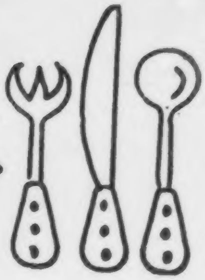
7. Vitamin D can be gotten from fortified milk or fish liver oils, but sunlight on the skin causes the body to produce vitamin D, too.

8. If you drink a glass of orange juice with whole wheat toast, the vitamin C in the orange juice helps your body absorb the iron in the whole wheat.

9. Vitamin A helps your baby's body cells grow properly.

10. Tomatoes and potatoes are good sources of vitamin C.

RECIPE PAGE



ACDFolacin Flapjacks

(adapted from The Vegetarian Epicure, by Anna Thomas)

Equipment needed:
- electric griddle or fry pan
- several large bowls
- mixing spoons, pancake turner
- measuring spoons and cup
- small pan for melting butter
- blender (optional)
- plates and utensils for serving

Ingredients:
- 1/4 cup butter
- 2 eggs
- 3/4 cup vitamin D-fortified milk (whole or skim)

- 2 cups whole wheat flour
- 1/2 tsp. baking soda
- 1/2 tsp. iodized salt

- 3/4 to 1 cup orange juice

- oil to grease frying pan or griddle

- syrup and butter, or marmalade butter made by heating the contents of one small jar of marmalade with 1/4 cup butter

Instructions: Melt butter by placing in small pan and putting small pan in fry pan or on griddle with heat turned on to low.

Mix together eggs, butter and milk in a bowl (or in a blender, if desired). In another bowl, stir flour, baking soda, and salt together. Add the dry ingredients to the wet ingredients; mix only until dry ingredients are moistened.

Gradually stir in the orange juice to the consistency of batter that you wish (using less orange juice makes a thicker batter and thicker pancakes take longer to cook).

Heat griddle or fry pan to "pancake" temperature (this varies with type and finish of pan), adding small amount of oil, if required. Use about 1/4 cup batter for each flapjack, turn once when bubbles have appeared.

Makes about 9-10 medium flapjacks

Suggestions: Serve with syrup and butter or butter-marmalade mixture.

LESSON 6

ADDITIONS AND SUBTRACTIONS

(Supplements and Other Drugs)

FOCUS

A wide variety of substances are classified as drugs. All may have dangerous effects on the developing baby and should be avoided, except on the advice of a physician. Vitamin/mineral supplements are included in the drug category.

OBJECTIVES

The student will be able to:

1. identify alcohol, caffeine (found in coffee, tea), nicotine (found in cigarettes, cigars), and "street substances" (e.g., marijuana, LSD, angel dust) as substances possibly dangerous to the developing baby.
2. describe three characteristics of Fetal Alcohol Syndrome (FAS).
3. recognize an "over-the-counter" drug (OTC) and explain why it should not be used in pregnancy.
4. recognize that too much of any vitamin/mineral preparation during pregnancy might be harmful to the developing baby and should be used only with the advice of a physician.
5. recognize that smoking is harmful, not only to the mother's health, but has particular dangers for the developing baby.

TEACHER'S NOTES

Any drug--nicotine, caffeine, alcohol, over-the-counter drugs (including vitamin/mineral supplements), prescription drugs, or "street substances"--has an effect on the pregnant teenager; many of these drugs affect her baby because they cross through the placenta and circulate in the baby's blood stream. The fetus is most sensitive to drugs during the first 12 weeks of pregnancy, the time when many of its organ systems are developing. However, different drugs have different effects--some minor and temporary, others major and permanent. Thus the pregnant teenager should use drugs only on her doctor's advice.

Alcohol has been shown to cause Fetal Alcohol Syndrome (FAS) in infants; with this syndrome, babies are born with a variety of physical and mental handicaps, such as a small head circumference and attendant mental retardation and a particular set of facial characteristics. Below average weight and height both before and after birth is also characteristic of babies born with FAS.

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Luke, Barbara. Maternal Nutrition. (Chapter 8: Influence of Maternal Smoking on the Course and Outcome of Pregnancy, Chapter 10: The Fetal Alcohol Syndrome). Boston: Little, Brown and Company, 1979.

Working with the Pregnant Teenager: A Guide for Nutrition Educators. Program Aid No. 1303. U. S. Department of Agriculture, U. S. Department of Health and Social Services, and National Foundation March of Dimes: U. S. Government Printing Office, 1981. (Loose-leaf booklet and charts)

INFORMATION HANDOUT

Duplicate and distribute "B-RIGHT IDEAS" to students. Read over the handout with the class or individual student to emphasize particular points and answer questions.

WORKSHEET

Duplicate "THE PUZZLE PAGE" and use as in-class exercise or as a take-home exercise. If sent home, encourage the student to seek the help of others in the family or living group.

SUGGESTED ACTIVITIES

Related Activities in other lessons:

- Lesson A-5,
  - Activity #3: comparison of non-alcoholic beverages (nutrient content)
  - Activity #4: speaker from Alcoholics Anonymous or a similar group
- Lesson 12,
  - Activity #3: drugs and nursing

Activity #1: "Treat with Care: Drugs During Pregnancy"

Preparation:

Collect pictures of, or containers or packages of, the following: cigarettes/cigars, wine/beer/hard liquor, aspirin/cough medicine/antihistamine capsules/vitamin-mineral supplements/other over-the-counter drugs, prescription drugs (especially tranquilizers, barbiturates, and amphetamines...your druggist may be able to help), coffee/tea/chocolate.

Alternatively, have each student bring in one picture or container. Prepare a display for (or with) the students using the information found on a separate sheet in this lesson. You may want to duplicate the drug sheet for the students.

Activity:

Discuss the relative dangers of the various kinds of drugs (nicotine and alcohol have definite negative effects during pregnancy).

Emphasize that all drugs may have effects on the developing baby and should be used only with the advice of the doctor.

Ask the students if anything has been left out (street drugs or "street substances") and seek their comments on the possible dangers of using these drugs during pregnancy (effects non well-defined; may encourage poor eating habits and general health habits; danger of infection if injecting the drug; substances other than drug may be added to cut the dose and these unknown substances may themselves be dangerous).

Activity #2: "Fetal Alcohol Syndrome"

Preparation:

If possible, obtain a copy of the issue of Nutrition Today listed in the Reference section, for a good discussion of Fetal Alcohol Syndrome (FAS) and some pictures of afflicted babies.

6/3

Activity #2 (continued)

Activity:

Define FAS for the students:

-- a set of mental and physical deformities in babies caused by the mother's having consumed alcohol during pregnancy:
  * mental retardation
  * head too small
  * irritable baby
  * abnormal formation of face
  * hyperactive in childhood
  * poor coordination

-- is directly related to the amount of alcohol per day the pregnant woman drinks:
  * safe level may be one drink a day (one mixed drink, one beer, one 5-oz. glass of wine)
  * five or more drinks a day has been clearly linked to FAS
  * one to four drinks a day may increase the risk of spontaneous abortion, lowered birth weight, unusual physical development, lowered IQ, nerve damage

-- can be prevented by avoiding alcohol or by limiting consumption of alcohol to no more than one drink a day.

-- binge drinking may be more dangerous to the baby than an occasional drink, because of the high levels of alcohol to which the baby is periodically exposed.

Discuss with the students whether the risk to the baby is worth consuming alcohol. Ask the class for alternative suggestions to drinking alcoholic beverages. What are some ways to avoid their use?

Activity #3:

Combine Activity #2, above, with Activity #3 in Lesson A-1 (Appendix A). This lesson compares alcoholic and non-alcoholic beverages from a nutritional standpoint.

Activity #4: "A Bad Combination"

Preparation:

Set up a baby doll with a cigarette in its hand and an ash try with butts near-by. Allow the students to see the display without comment.

Activity:

Ask the students to react to what they see, and to share their feelings.

Since nicotine crosses the placenta, emphasize that when they smoke, their baby also smokes.

Present evidence why smoking is not advisable during pregnancy:

1. Smoking retards the growth of the baby during pregnancy. Oxygen levels in the blood are reduced and some vitamins cannot be used properly.
2. The baby has an increased chance of being small at birth. Although some "catch-up" in weight may occur, the baby may never make up lost height.
3. Smoking increases the chance that the baby will die during or after birth. Smoking one pack a day increases that risk by about 50%.
4. Smoking may cut the mother's appetite. A less than adequate diet may mean a less than healthy baby.
5. If smoking can be stopped by about 4 months of pregnancy, the risks become about the same as for a mother who has not smoked.

Ask the students to summarize their thoughts/recommendations about smoking during pregnancy. Have them prepare a poster to be used in future classes.

Activity #5: "Supplements: Yes and No"

Preparation:

Collect bottles (or pictures) of vitamin/mineral supplements; if possible, obtain both OTC and prescription containers (your druggist may be able to help) and containers for single vitamin or single mineral supplements.

Prepare a display for the students. Points to emphasize include:

1. Vitamin/mineral supplements should be used only with the advice of a physician.
2. OTC supplements should not be used.
3. Single vitamin or single mineral supplements should not be used, unless under a doctor's care. Some vitamins (vitamin A and vitamin D) are toxic in high doses; an excess of certain minerals can cause the body to improperly use others (too much iron may interfere with zinc absorption and vice versa).

Activity:

Poll the class about who has been put on a supplement by her doctor and inquire if the doctor explained some of the reasons that the supplements might be needed.

Mention that the two most common nutrients supplemented in pregnancy are folacin and iron, mainly to help increase the mother's blood supply. Refer to Lesson 4 for further information on iron and to Lesson 5 for folacin.

Activity #6:

Invite a doctor, nurse or dietitian to talk with the class about the nutritional dangers in using drugs in pregnancy. Equip the guest beforehand with a list of the objectives from the lesson, the handout (B-RIGHT IDEAS), and possibly a copy of the drug information sheet which accompanies Activity #1.

Encourage the students to write out a list of questions, together or individually, that they would like to have discussed.

6/4

LESSON 6

DRUGS DURING PREGNANCY

(Information Sheet for Activity #1)

Drug	Effect	Use
1. Nicotine (cigarettes, cigars)	Heavy smoking may lead to low birth weight babies, which means that the baby may have more health problems. It is especially harmful during the second half of pregnancy.	Should be avoided
2. Alcohol (wine, beer, whiskey, brandy)	Daily drinking of more than 2 glasses of wine, 2 cans of beer, or 1 mixed drink, can cause Fetal Alcohol Syndrome. Affected babies tend to have low birth weight, mental retardation, physical deformities, and behavioral problems (including hyperactivity, restlessness, and poor attention spans).	Should be avoided
3. Aspirin	During the last 3 months of pregnancy, frequent use may cause excessive bleeding at delivery, and may prolong pregnancy and labor.	Should be taken only under medical supervision
4. Vitamin/mineral Supplements (OTC or prescription)	Some vitamins in large doses can cause birth defects; too much of one mineral can cause another to be used improperly.	Should be used only under medical supervision
5. Other over-the-counter Drugs (includes cold/cough medicine, antihistamine preparations)	May cross the placenta; effects not well known.	Should be used with medical supervision
6. Tranquilizers	Used during the first 3 months of pregnancy, may cause cleft lip, cleft palate, or other deformities.	Should be used only under medical supervision
7. Barbiturates	Mothers who have taken large doses may have babies who are addicted. Babies may have tremors, restlessness, and be irritable.	Should be used only under medical supervision
8. Amphetamines	May cause birth defects.	Should be used only under medical supervision
9. Caffeine (coffee, tea, cola drinks, cocoa)	Occurs naturally and in many OTC drugs. Known to cross the placenta but role in human pregnancy still unclear.	Avoid or use sparingly

B - RIGHT IDEAS

(Information Sheet)

DRUGS: ADDITIONS AND SUBTRACTIONS

Many different kinds of substances are considered drugs: alcohol, caffeine (found in coffee, tea, chocolate), nicotine (found in cigarettes, cigars), over-the-counter (OTC) drugs, prescription drugs and "street substances". These substances all have some effect on your body; but since they may cross the placenta, they also can affect your developing baby.

Babies born to mothers who drink alcoholic beverages have an increased risk of developing Fetal Alcohol Syndrome (FAS). The greater the amount of alcohol the mother consumes each day, the greater the risk to the baby. FAS babies may be severely mentally and/or physically retarded, may be hyperactive or restless, and may have poor attention spans as children. The damage is permanent and lasts as long as the child lives, even into adulthood. It is safest to avoid alcohol all together. If alcoholic beverages are to be consumed, it is advisable to limit them to one mixed drink or one 12-ounce beer or one 5-ounce glass of wine in any one day during pregnancy.

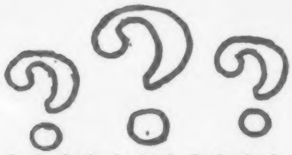
Especially during the last half of pregnancy, cigarette smoking is known to retard the baby's growth. Use of cigarettes also increases the risk of the baby dying at, or after, birth; the more cigarettes each day, the higher the risk.

OTC drugs, as well as prescription drugs, may cross the placenta and affect the baby. The actions of some drugs are understood; others are not. Vitamin/mineral supplements should be used during pregnancy only on the advice of your doctor. Certain vitamins are toxic in large doses (A and D); likewise, large doses of certain minerals can interfere with your baby's use of other minerals (too much iron can interfere with zinc use, and vice versa). Authorities do not agree about whether high intakes of caffeine found in coffee, tea, and some soft drinks will be harmful in pregnancy. Street drugs pose particular problems: many of the effects on the baby are not well-defined; the baby may be born addicted; use of these drugs encourages poor health/nutrition habits; injection introduces the danger of infection.

A good "rule of thumb" is: never take any drug during pregnancy unless you have talked with your doctor first. Your health and the health of your baby may be at risk.

LESSON 6

THE PUZZLE PAGE



(Worksheet)

Directions:

Using the Information Handout (B-RIGHT IDEAS) and any information that you may have learned from class discussions, fill in why a particular drug may be harmful to your developing baby and what you could do to avoid the drug. An example gives you a head start.

Drug	Why is this drug dangerous to my developing baby?	What can I do about using this drug?
1. Aspirin	If taken during the last 3 months of pregnancy, it might cause too much bleeding at delivery.	Use aspirin only upon the advice of my doctor. Ask my doctor about taking an aspirin substitute (tylenol).
2. Nicotine (cigarettes)		
3. Alcohol		
4. Over-the-counter vitamin/mineral supplements		
5. Prescribed vitamin/mineral supplements		
6. Street substances (such as LSD, marijuana, angel dust)		

To the Teacher: Information to complete this worksheet may be found in the Information Handout (B-RIGHT IDEAS), in the drug information sheet, and in Activity #1, #2, #4, and #5 (all included in this lesson).

LESSON 7

EATING ON THE RUN

(Ways to Improve Nutrition Away from Home)

FOCUS

Much food is eaten away from home. Fast foods, snacks and school breakfasts or lunches, if carefully chosen, can be a nutritious part of the day's food intake.

OBJECTIVES

The student will be able to:

1. using a menu from a fast food restaurant, pick a nutritious breakfast, lunch, or dinner.
2. differentiate snacks of high nutrient density from snacks of low nutrient density (i.e., nutritious from non-nutritious).
3. evaluate a current school breakfast or luncheon menu in terms of the four food groups, making suggestions for additions or substitutions to increase the nutrient content for the pregnant teenager.

TEACHER'S NOTES

About one out of three people in the U. S. population eats a meal away from home each day. That represents about one-third of the U. S. food dollar being spent away from home; estimates for 1985 suggest that one-half of each dollar spent for food will be spent away from home. For the teenager, fast food restaurants, "brown-bagging", snacking, and school breakfast or lunch programs are the major sources of nutrition on the run. All sources can contribute to a nutritionally balanced diet if the food choices are thoughtfully made.

Fast food meals are generally high in fat, sugar, calories, and salt, but low in fiber, some vitamins (A, C, and folacin) and some minerals (iron and possibly calcium). These meals appeal to teens because they are convenient, are available everywhere, taste good, and appeal to other teens. The pregnant teenager can enjoy an occasional fast food meal and still not compromise either her health or her developing baby's health by remembering a few simple rules.

Likewise, "brown-bagging" it can contribute to the nutritionally sound diet for a pregnant teenager. She should remember to include a protein-rich food, a fruit and/or vegetable (preferably vitamin A- or C-rich), a nutritious beverage (either brought or bought), and some enriched or whole grain product.

Since snacks seem to be the mainstay of the teenager's nutritional existence, emphasis should be placed on nutritional snacks as opposed to "empty-calorie" snacks. "Empty-calorie" snacks might be categorized as those which do not fit into any of the Four Food Groups...foods loaded with sugar, salt, and fat, but low on protein, vitamins and minerals.

USDA regulations specify standards for school breakfast and lunch programs. The popularity of the program varies from school to school. School food service personnel can be a useful resource for information about the child nutrition programs in your particular school and for possible modifications in the menu for the pregnant teenager.

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Lansky, Vicky. The Taming of the C.A.N.D.Y. Monster. Wayzata, Minnesota: Meadowbrook Press, 1978.

Stern, Judith S., and Denenberg, R. V. How to Stay Slim and Healthy on the Fast Food Diet. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1980.

INFORMATION HANDOUT

Duplicate and distribute "B-RIGHT IDEAS" to students. Read over the handout with the class or individual student to emphasize particular points and answer questions.

WORKSHEET

Duplicate "THE PUZZLE PAGE" and use as in-class exercise or as a take-home exercise. If sent home, encourage the student to seek the help of others in the family or living group.

SUGGESTED ACTIVITIES

Related Activities in other lessons:

- Lesson A-1,
  - Activity #5: Food preparation: "Orange "Cooler"
- Lesson A-2,
  - Activity #7: Food preparation: "Basic Granola and Fruit"
- Lesson A-4,
  - Activity #5: Food preparation: "Liver in Disguise" and "Stuffed Celery Logs"
- Lesson A-5
  - Activity #5: Food preparation: "Creamy Tomato Sipper" and "Frosted Banana Drink"
- Lesson 1,
  - Activity #6: Food preparation: "Snack by the Hundreds"
- Lesson 2,
  - Activity #5: Food preparation: "Bagel Pizzas" and "Appetizing Bean Dip"
- Lesson 3,
  - Activity #2: Calcium in school breakfast or lunch menus
  - Activity #3: Calcium in fast food meals
  - Activity #5: Food preparation: "Cheese Party Tray"
- Lesson 9,
  - Activity #6: Food preparation: "high fiber snack" of raisins, mini-shredded wheat, and dry-roasted nuts
  - Activity #8: Food preparation: "P.B.R's" (peanut butter and raisin sandwiches)

7/2

Activity #1: "Fast Food Facts"

Preparation:

Obtain a menu from a local fast food restaurant: get one directly from the restaurant, have a student copy the menu and prices, or make a copy yourself. Make copies of the menu for the students.

Activity:

Ask the students what they think of when you say "fast foods" or write "fast foods" on the board, and ask for comments. Some points to make:

Positive thoughts: convenient, tastes good, others in the peer group approve, better than skipping a meal completely, good place to eat and visit with friends.....

Negative thoughts: more expensive than "home-made", high in fat/sugar/calorie/salt, low in fiber/some vitamins/some minerals, little variety in food choices.....

Pass out the menu and ask the students to first choose their normal meal (what they would usually order for breakfast, lunch, or dinner at the restaurant). Then evaluate the menus as a class, as non-threateningly as possible. Encourage the students to recognize both the good and bad points in each other's choices. Then have different students try to choose more balanced or nutritious meals from the menu. Also have them suggest possible additions to the menu that would give them better nutritional choices.

Refer to other lessons in this guide for information on particular nutrients (i.e., fiber, calories, vitamins, minerals, four food groups). The Stern/Denenberg book in the reference section of this lesson would be a helpful resource.

Activity #2:

A variation on Activity #1: If time and finances permit, have the students eat a meal at a fast food restaurant, keeping track of their choices and prices. Then do Activity #1. Later, return to the restuarant, and suggest that the students put what they have learned into practice, again keeping track of choices and prices. Later, as a group, evaluate the differences in the first and second menu choices, with particular emphasis on nutrition and cost.

Activity #3: "Brown Bag Day"

Preparation:

Declare a day as "Brown-Bagging Day" and ask each student to prepare a sack lunch for eating at school.

Activity:

Review the Four Food Groups (see Lessons A-1 through A-4 of Appendix A for the general food categories). Ask the students to include a food from each food group and be able to state why that food is important for them. If milk is available in your school, you might wish to limit the lunch items brought from home to the other three food groups.

When "Brown-Bag Day" arrives, each student and the teacher should have the opportunity to describe her lunch to the class, and to explain why she chose each food (personal preference, nutritional value, cost, etc.).

After lunch, have the class make a list or poster of some important things to remember in packing a sack lunch, with respect to nutrition and other important concerns.

Activity #4: "Snacks are Okay"

Write "NSCAKS are YAKO" on the chalk board. Ask the class to unscramble the message (SNACKS are OKAY).

Ask the class to give examples of nutritious, "okay" snacks...make a list. From that list, have the students try to generalize their suggestions into several categories. Several suggestions follow:

1. Snacks with a high amount of nutrients in a small volume of food (high nutrient density)...cheese, meats, peanut butter, pizza, milk products, enriched or whole grain bread products.
2. Thin, watery, or dilute snacks...milk, fruit juices, broth, water-based soups.
3. Bulky snacks with lots of fiber or coarseness...whole grain breads and crackers, raw fruits and vegetables, dried fruits, nuts.
4. Watery crisp snacks...watermelon and other melons, raw vegetables.

In addition, have the students suggest some snacks of low nutrient density (foods which have low amounts of nutrients in a large quantity of the food). Some suggestions follow:

Candy, carbonated beverages, alcoholic beverages, french fries, potato chips and other chip products, pastry items such as Danish rolls, doughnuts, cakes and pies.

Have the class examine several of the preparation activities at the beginning of the Suggested Activities list and choose one that they would like to prepare. Alternatively, the teacher could choose and prepare one to serve at the end of this activity.

Activity #5: "The School Fare"

Preparation:

Obtain a copy of the school breakfast or lunch menu for the week. Some communities print the menus in the newspaper weekly; in other districts you may have to ask the school food service for a copy. Make copies of the menus for the students.

Activity:

Distribute copies of the menus to the students. Review the Four Food Groups (Lessons A-1 through A-4 in Appendix A) with the class, so they remember the general food items in each group. As a class, evaluate the menus for examples of each group, for serving sizes being adequate for the pregnant teenager, and for specific types of foods generally acceptable or not acceptable to the teenager. Then ask the students to make suggestions for improving the menus for the pregnant teenager, such as:

1. increase fiber by more fruits and vegetables and whole grain products
2. additional milk and/or milk products
3. eliminate foods that might cause gas or indigestion
4. decrease the amounts of fried or greasy foods
5. in situations when the pregnant teen is having problems with nausea, allow the student access to foods at different times and have dry foods available such as crackers, dry toast.

Lesson 9 in this guide might help in this activity.

LESSON 7

B - RIGHT IDEAS

EATING ON THE RUN

(Information Sheet)

Even when you are pregnant, food from fast food restaurants, your own brown bag lunch, school breakfast or lunch programs, or snacks eaten on the run can be part of a well-balanced diet. Milk (or a milkshake if you need to gain weight) is a good choice for a drink; pizza is a nutritious food which can contain representatives from all four food groups, as does a medium-sized cheeseburger with lettuce and tomato. Fast food menus may be high in fat, sugar, calories, and salt, but low in fiber, some vitamins and some minerals. Since some vitamins (A, C, and folacin) may be low in fast food menu choices, try to choose coleslaw or a salad with that pizza or "Whopper", or remember to eat a good source of those vitamins at some other meal that day. And don't forget the importance of fiber in your diet...one food component that fast foods sometimes lack. If nausea is a problem for you, it might be advisable to skip the fried foods (chicken, fish, fries, onion rings, and fried pies) for the time being, and to eat moderate amounts of those foods when your stomach can tolerate them.

You can make brown bag lunches and snacks nutritious. For that paper sack, think in terms of a food from each food group; for snacks, try to avoid "empty-calorie" foods...those foods which do not fit into any of the four food groups and which are loaded with sugar, salt, and fat, but are low in protein, vitamins and minerals. Emphasize snacks of high nutrient density such as cheese, meat, peanut butter, bulky snacks with fiber such as whole grain crackers and raw or dried fruits, fluid snacks such as milk and fruit juices, and crisp (watery, not greasy) snacks such as raw vegetables and fruits.

The school breakfast and lunch programs offer balanced meals. As a pregnant teen, you may wish to suggest to your teacher or the food service personnel some ways in which these menus could meet your particular needs and the needs of your developing baby.

..........GIGGLES..........

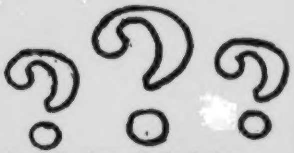
Q: What's the difference between a pizza and an elephant?
A: Dunno! What is the difference?
Q: Boy, remind me never to send you out for a pizza!!

Willy: How many quarter-pounders can you put in an empty paper bag?
Nilly: One. After that the bag isn't empty!

Polly: What did the slice of Swiss cheese say to the hamburger patty?
Dolly: "I got you covered".

LESSON 7

THE PUZZLE PAGE



(Worksheet)

Suggestions for improving fast food choices:

1. Choose milk or juice (or milkshake, if trying to gain weight) instead of soft drink...for increase in calcium, maybe vitamins A and D).
2. Order salad bar with your meal, if available...for increase in vitamin C and increase in fiber.
3. Order cheese-burger, instead of plain burger...for increase in calcium and vitamin A.
4. Order combination plate which includes coleslaw...for increase in fiber and vitamin C.
5. Avoid greasy foods like french fries, onion rings, and fried chicken or fish if troubled by nausea; alternatively, remove the coating on chicken and fish... to decrease the "empty" calories from fat.
6. Add extra lettuce and tomato to the hamburger...for increase in vitamin C and fiber.
7. Take along a piece of fresh fruit for dessert...generally more nutritious than most desserts available.

Below are several fast food menus. Using the above suggestions, write down the changes that you could make in the menus to make them more nutritious for the pregnant teenager. There is no one "right" answer, so use the list and your imagination!

	Menu	Changes you would suggest	Why?
1.	Hamburger French fries Milk		
2.	Pizza with sausage and cheese Soft drink		
3.	Fried chicken Mashed potatoes Roll and butter Fried apple pie Coffee		
4.	Cheese taco Beef burrito Root beer		
5.	Chili cheese dog Beer Fried onion rings Potato salad		
6.	Fried shrimp French fries Chocolate shake Fried lemon pie		

LESSON 8

A PENNY SAVED

(Menu Planning and Smart Shooping for Economy)

FOCUS

Some simple, easy-to-remember guidelines make careful menu planning and smart shopping easy, and this really can save money.

OBJECTIVES

The student will be able to:

1. prepare a grocery list choosing from various forms of the same food, to "cook" a particular recipe or buy food for a particular menu as economically as possible.
2. list three combinations of complementary vegetable or animal-vegetable protein foods and suggest a recipe idea using these alternative protein sources.
3. state four shopping ideas to keep the grocery bill low.
4. using nutrition labels from food products, choose the most nutritious (nutrient dense) produce from similar products.

TEACHER'S NOTES

Shopping on a limited budget may be frustrating; but, by using some simple guidelines, the food-buyer need not sacrifice good nutrition for economy.

Write a shopping list before shopping, after checking the weekly newspaper ads for sales at stores where shopping is normally done. Especially look for seasonal low prices on fruits and vegetables. Combining complementary vegetable or animal-vegetable protein foods allows the cook to save money by making use of alternative sources of protein. If possible, plan several day's meals in advance around the sale items. And, remember to shop when not hungry to cut down on impulse buying.

Once at the store, try to stick to the list and make use of unit pricing in choosing from different forms of the same food item. Buy sizes that will be used up; don't hesitate to request repackaging of fresh items into more appropriate sized packages. Do not buy dented cans of food that are marked down (danger of contamination), but sometimes damaged packages of dry foods can be a good buy, if the damage is superficial. Learn to read nutrition labels, ingredient lists, and other information on the packages. Remember that convenience foods are generally more expensive than "from scratch" foods. Use cents-off coupons, but only for items that would be purchased even without the coupon. Sometimes--even with the discount from the coupon--brand-name items will still cost more than store brands. Request rain-checks when an advertised special is no longer available.

Finally, try to put meats, dairy and frozen foods in the cart last and get them home to the refrigerator or freezer quickly, to preserve the nutritional quality and to prevent loss of money due to spoiled food.

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Katt, Sally, ed. "What's to Eat?" and Other Questions Kids Ask about Food. Yearbook of Agriculture, 1979. Washington, D.C.: U. S. Government Printing Office, 1979.

Morrison, Margaret. "A Consumer's Guide to Food Labels". FDA Consumer (June 1977): 99b-99d. This article is included in Appendix B.

INFORMATION HANDOUT

Duplicate and distribute "B-RIGHT IDEAS" to students. Read over the handout with the class or individual student to emphasize particular points and answer questions.

WORKSHEET

Duplicate "THE PUZZLE PAGE" and use as an in-class exercise or as a take-home exercise. If sent home, encourage the student to seek the help of others in the family or living group.

SUGGESTED ACTIVITIES

Related Activities in other lessons:

- Lesson A-2,
  - Activity #2: Bread labels, to compare brown and white breads
  - Activity #6: Scavenger hunt at food store, with emphasis on bread and cereals. Possibly request that the students note price and unit price, if available
- Lesson A-5,
  - Activity #1: Learning about the "Fifth" Food Group by examining food labels and nutrition information labels
  - Activity #2: Finding "hidden" sugar on labels
- Lesson 2,
  - Activity #4: Worksheet on using vegetable or animal-vegetable protein combinations as alternative protein sources; use along with information sheet from the same lesson
  - Activity #5: Food preparation: "Bagel Pizzas" and "Appetizing Bean Dip"
- Lesson 4,
  - Activity #3: Examining ingredient lists on labels for various forms of sodium

Activity #1: "Making Menus"

Preparation:
Collect several weeks' large food advertisements from several grocery stores or supermarkets (newspapers or flyers).

Activity:
Review the four food groups with the students (see Lessons A-1 through A-4, Appendix A), if necessary.

Have the students work singly or in small groups. Ask them to devise inexpensive menus which include one food from each food group by using the ads from one week. Have each student or group share the menu ideas with the class. Ask why they picked particular foods. Points to emphasize or to use in summary:

1. Price is an important consideration, but may not be the major consideration. Personal likes/dislikes, size of, or amount of, item on sale, distance to store or ease of transportation, etc., may be more important factors in the choices.
2. Cost per serving and need ("will it all be used up?") are things to consider.
3. Availability of other services at same location (in-store bakery, delicatessen, bagging/carry-out) might influence where to shop.
4. Ease of preparation and time involved in preparation should be balanced against use of convenience foods (generally more expensive).
5. Use of in-store coupons can add to savings, but only if the item is one that will be used or one that is normally purchased.

Activity #2: "Learning from Labels"

Preparation:
Show the students a sample of a label from a food product and an example of a nutrition information label. Ask each student to bring in several examples of each from different products.

Alternatively, collect a variety of labels which include nutrition information for classroom use.

Duplicate copies of the article "Consumer's Guide to Food Labels" which is in Appendix B, so that each student can read the article or duplicate copies of the Summary included in this lesson on a separate sheet of paper.

Activity:
Have the students examine labels and nutrition information panels, to identify the various parts mentioned in the article/summary. Discuss using this information in making choices of food items.

Activity #3: "What's the Best Choice?"

Preparation:
Duplicate the worksheet ("THE PUZZLE PAGE"). Beforehand, contact the store manager to ask if it would be all right to bring your class. Explain that you are studying ways to shop economically and would like the students to become familiar with the wide variety of products in the store. The manager might be approached to help in a tour of the store and in providing information about the layout and products.

Activity:
Distribute the worksheet to the students. Explain to the students that they are going on a "scavenger hunt" at the grocery store/supermarket.

Activity #3 (continued)

As a class, or in small groups, visit the store and fill in the blanks for price of item as purchased and unit price (if available). Return to class and calculate an approximate price per serving.

Discuss which type of each food the students would purchase and why. Include a comparison of nutrient values with respect to money spent or amount consumed.

Activity #4: "Cooking for Economy"

Preparation:
Collect several weeks' grocery advertisements as in Activity #1. Have the students help in the collection. Later have each student bring in a cookbook which emphasizes "cooking for economy"--from home, from the school or public library--or several recipes from the newspaper or magazine.

Activity #4 (continued)

Activity:
Ask the students to scan all of the advertisements and choose one or two which contain foods that they would use. Then have them find an appropriate recipe in any of the books or clippings that makes use of one or more of the foods on special. Suggest that they choose several "main" products (such as meat or meat substitute, dairy product, fruit and/or vegetable) and look through the index of the cookbook under these several foods for the recipe ideas.

After everyone has found at least one recipe which uses sale items, have the students share the recipes that they have chosen and why a particular recipe was chosen. Discuss the selections, emphasizing nutritional content and cost savings.

Activity #5:

Refer to Lesson A-2, Activity #6, in Appendix A. Show the worksheet (THE PUZZLE PAGE) to the students. Using a similar idea, have each student devise a worksheet for the other three food groups (fruits and vegetables, protein foods, and dairy products), to be exchanged with one-another on a hunt or to be put into a final form for use by later classes. Suggest that they work on the worksheet by going to the grocery store to examine the products "first hand" while devising the items.

..........GIGGLES.........

Waiter: Are you ready to order, Ma'am?
Customer: Do you have any spare ribs this evening?
Waiter: I'm sorry, Ma'am. We sell all we make; we have no extras.

Q: Why did the farmer send his turkey to the psychiatrist just before Thanksgiving?
A: Because he was in such a fowl mood.

LESSON 8

◆◆◆◆◆◆◆◆◆◆◆

SUMMARY of "Consumer's Guide to Food Labels" for use in Activity #2 --

LABEL INFORMATION

Basic information on a food label:

1. Name of the product
2. Net contents or net weight
3. Name and address of manufacturer, packer, or distributor
4. List of ingredients:
   a. Ingredient present in largest amount by weight is listed first.
   b. Additives must be listed; colors and flavors not necessarily by name.
   c. "Standardized foods" (such as mayonnaise, catsup, ice cream) do not have to have a list of ingredients.

Nutrition information:

1. Must appear if a nutrient has been added, or if there is a nutritional claim made for the food.
2. Must list calories, protein, carbohydrate and fat per serving.
3. Must list percentages of U. S. Recommended Daily Allowances (U.S. RDA's) of protein and seven important vitamins and minerals per serving (vitamin A, vitamin C, thiamin, riboflavin, niacin, calcium and iron).
4. Must list the size of one serving and the number of servings in the container.

Other points:

1. The U.S. RDA's are the approximate amounts of protein, vitamins, and minerals that an adult should eat every day to keep healthy. They do not make allowances for increases needed in pregnancy.
2. The word "imitation" must be used on the label when the product is not as nutritious as the product which it resembles and for which it is a substitute.
3. The product must be called by the "common or usual" name: each ingredient must appear in the ingredient list in descending order by weight; the food to be prepared from the package must be identified; the foods or ingredients that must be added to complete the recipe must be stated (such as "eggs and oil" on a cake mix label).
4. Grades of food, such as meat and milk, are not based on nutrient content.
5. Manufacturers may "open date" their products to help consumers obtain food that is fresh and wholesome. Several kinds of dating are used: packing date, pull or sell date, expiration of freshness date.
6. Some companies use code dating on products which have a long shelf life. (In canned goods, this appears as letters and numbers stamped into the metal at the top or bottom of the can.)
7. The Universal Product Code (UPC) is a small block of parallel lines of various widths; the code is unique to the product. It allows stores to use computers in checkout and inventory.

LESSON 8

B - RIGHT IDEAS

(Information Sheet)

THE SHOPPING GAME

Buying food is like a game which is easy to win if you follow a few simple rules. Not only can you save money, but it can even be fun trying to figure out the "best" buy.

Before going to the grocery store or supermarket, make up a shopping list; try using the food sales ads in the newspaper. Plan menus a few days in advance by making the best use of the sales. Eat something before you shop; this helps you avoid impulse buying of things you might not really need.

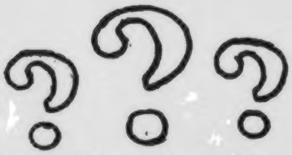
Some hints for "smart shopping" once you are at the store:

1. Stick to your list.
2. Make use of unit pricing to decide which food is your "best" buy. This may not be available in all stores, so you may have to figure out the cost per serving or the cost per weight.
3. Buy appropriate-sized packages; ask for produce or meats to be repackaged in smaller packages, if necessary.
4. Use less expensive cuts of meats or combine meat with non-meat protein for alternative protein sources which can save money.
5. Read nutrition information and food labels.
6. Use in-store and brand name coupons (from newspapers and/or magazines) if they represent a real savings and you'd buy the product anyway.
7. Use store brands or generic goods as much as possible.
8. Shop with someone else who can use the same foods; you can buy larger items and split both the product and the savings.
9. Put frozen and fresh foods in the cart last to preserve their freshness.
10. Request "rain checks" when a sale item is no longer available.

Make a habit of looking through magazines and newspapers for coupons and "economy" recipes. Keep these food ideas handy when you are reading food ads and making up your grocery list. Remember that convenience foods are generally more expensive than "from scratch" items; you have to make the decision if the time saved is worth the extra price.

Indeed, shopping for food can be enjoyable; and, if done with some care, it can add up to dollars saved, not just pennies!

LESSON 8



THE PUZZLE PAGE

(Worksheet)

Directions:

Assume that company is coming to dinner this evening. You have decided on the following menu, but find upon checking your cabinets and refrigerator/freezer that you are out of a few items. Since you are a thrifty soul, you wish to buy the items you need as inexpensively as possible without sacrificing nutritional quality.

Dinner Menu	Grocery List
barbequed chicken	chicken
baked potatoes	potatoes
corn on the cob or kernel corn	corn
peas	peas
strawberry and pineapple chunk salad	strawberries
milk	milk

Fill in the table below by checking the actual items at a grocery store. Star (*) the items that you feel are the best buy and be able to explain why you felt they were the best buy nutritionally and economically. Ask for help when necessary for the calculations.

Item	Brand/Size/Price	Unit Price (if available)	Approximate Cost Per Serving
WHOLE CHICKEN			
CHICKEN PARTS (kind)			
FRESH POTATOES			
FROZEN "BAKED" POTATOES			
CANNED POTATOES			
CORN ON THE COB: CANNED FROZEN			
KERNEL CORN: CANNED FROZEN			
PEAS: CANNED FROZEN			
STRAWBERRIES: FRESH FROZEN			
FRESH MILK (skim or lo-fat)			
POWDERED MILK			

LESSON 9

◆◆◆◆◆◆◆◆◆◆◆

HOW DO YOU SPELL RELIEF?.....M-O-D-I-F-Y.....

◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆

(Common Problems in Pregnancy)

FOCUS

Changes in the diet may help lessen the discomforts of morning sickness, constipation and heartburn. Unusual food cravings may be harmless, but eating non-food items is never safe for mother or developing baby.

OBJECTIVES

The student will be able to:

1. list four changes in the diet that might help morning sickness. (Skipping breakfast is not an adequate answer.)
2. list three changes in the diet that might help constipation.
3. list three changes in the diet that might help heartburn.
4. describe the difference between "harmless" food cravings and pica (craving non-food items like ice, starch, clay) and describe the nutritional danger of pica.

TEACHER'S NOTES

Nausea, or vomiting, sometimes called morning sickness, may occur during the early months of pregnancy, but usually disappears after the third month. Constipation may be due to certain normal changes which take place during pregnancy; little exercise or not enough fiber and liquids in the diet may also cause this problem. Heartburn is more common during the last months of pregnancy because, as the baby grows, there is increased pressure on the mother's stomach. Medication for any of these problems should be used only with the advice of a physician.

Pica is the desire to eat non-food substances such as clay, laundry starch, ashes, or ice which may develop in some pregnant women. Clay eating may decrease iron absorption; eating other non-food items also may interfere with proper intake of nutritious substances.

REFERENCES

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Luke, Barbara. Maternal Nutrition. (Chapter 5: Understanding Pica in Pregnant Women). Boston: Little, Brown and Company, 1979.

Worthington-Roberts, Bonnie S.; Vermeersch, Joyce; and Williams, Sue Rodwell. Nutrition in Pregnancy and Lactation. 2nd ed. St. Louis: The C. V. Mosby Company, 1981.

INFORMATION HANDOUT

Duplicate and distribute "B-RIGHT IDEAS" to students. Read over the handout with the class or individual student to emphasize particular points and answer questions.

WORKSHEET

Duplicate "THE PUZZLE PAGE" and use as a take-home exercise in recording or estimating amounts of foods (see Activity #2). When sent home, encourage the student to seek the help of others in the family or living group.

SUGGESTED ACTIVITIES

Related Activities in other lessons:

- Lesson A-1,
  - Activity #3: Fiber in fruits and vegetables
- Lesson A-2,
  - Activity #2: Comparison of whole grain and enriched breads (includes fiber content)
  - Activity #7: Food preparation: "Basic Granola and Fruit"
- Lesson 7,
  - Activity #5: Discovering diet changes useful in pregnancy, using school breakfast/lunch menus.

Activity #1: "Remembrances"

(This activity might be especially appropriate for the "non-reader".)

Ask the students to remember (or better yet, to write down) whenever they experienced nausea, constipation, or heartburn, over a given period of time.....such as several days to a week. Discuss modifications of their diets, especially if they can also remember (or have written down) what they hadn't eaten before the upset.

Activity #2: "Keeping A Diet Log"

Preparation:

Duplicate the worksheet ("THE PUZZLE PAGE") for each student.

Activity:

Ask the student(s) to keep a 24-hour log of one day's typical food intake. Generally weekdays will differ from weekends; ask them to note which type of day they are recording. Have the students identify particular foods that might be a cause of nausea and heartburn in their diets and possible diet modifications that would help prevent or alleviate constipation. Summarize by placing their suggestions in categories suggested in the information handout ("B-RIGHT IDEAS").

Activity #3: "Go foods"

Preparation:

Collect labels or pictures of foods that might help with constipation and organize a display for the students. Alternatively, have the students help in the collection and prepare a poster of the foods.

9/3

Activity #3 (continued)

Suggested foods include:
raw fruits and vegetables, especially with peels or skins, bran cereals (such as raisin bran and bran flakes), seeds (such as sunflower, sesame, pumpkin), nuts (such as almonds, walnuts, pecans), peanuts, peanut butter and other nut butters, whole grain breads and other whole grain products, bran muffins. (Perhaps a sample of raw bran could be used to show the students which part of the wheat is being used.)

Activity:
Discuss different ways in which the various foods could be included in the teenager's diet. Don't forget to include a glass of water in the display or on the poster.

Prune juice and prunes are not included as a very high fiber food. They contain a chemical which stimulates bowel activity, so they work by a different mechanism.

Activity #4: "Mini Soaps"

Prepare verbal "scenarios" to illustrate possible cause and effect of relationships of eating habits to nausea, constipation, and heartburn. Present them to the students and discuss how the diet might be modified to help the problems.

For example:
"Sixteen-year old Susie is 3 months pregnant and finds she can't bear the thought of eating when she gets up in the morning, because she seems to be nauseous then. When she gets to school, she feels much better, but then doesn't have the time to eat."

Activity #4 (continued)

.....Possible suggestions would include eating something dry before arising, such as a cracker; packing a snack the night before to take with her in the morning and making arrangements with her teacher to eat it at school when her stomach is calmer.

or:
"Fourteen-year old Sally couldn't resist that third hamburger. Since she is almost 8 months pregnant, she seems hungry all the time, but frequently has discomfort after eating."
.....Possible suggestions would include eating smaller meals, avoiding fatty or fried foods, substituting something else for the third hamburger if she were still hungry, such as a small piece of fruit.

Activity #5: "The Undesirables"

Preparation:
Collect samples of dirt, laundry starch, ice and clay (if possible to get). Organize a display of these non-food substances for the students.

Activity:
Discuss the problem of pica with the students; emphasize that these substances keep the mother from eating the amount of food that she needs to produce a healthy baby. Suggest that the students discuss the problem with those at home, especially if there are Black students in the class.....Don't be judgmental if indeed the clay eating is an accepted part of pregnancy amongst some of the students.

Contrast pica with "normal" cravings. Ask the students for their own experiences with cravings. Be prepared for some weird combinations.

Activity #5 (continued)

If pica is a problem with any of the students, perhaps suggest that they discuss it with their physician or the school nurse at their next visit.

Activity #6:

Prepare a nutritious "high fiber" snack by mixing equal quantities of raisins, dry roasted nuts (such as peanuts), and mini shredded wheat biscuits (not sugared) together. Serve in small paper cups. Identify the foods for the students as being helpful in preventing and alleviating constipation.

Activity #7:

Combine Activity #3 and Activity #6.

Activity #8:

Prepare P.B.R.'s (name courtesy of Bridget Murphy) and serve them as a snack with orange juice. The recipe and instructions are on a separate sheet of paper so they may be duplicated and distributed to the students.

The vitamin C in the orange juice makes the iron in the whole wheat bread and raisins more available to the body.

Encourage the students to share the recipe with those at "home" and to report on their reactions.

..........GIGGLES..........

Q: What's the favorite food of a pregnant duck?
A: Milk and quackers.

Dit: Why is bran good food for people in a hurry?
Dot: Because it gives you "go" power.

He: Why was the Spaniard shivering?
She: Because he just ate a bowl of chili.

B - RIGHT IDEAS

(Information Sheet)

COMMON PROBLEMS DURING PREGNANCY

Nausea (morning sickness), constipation (difficulty with bowel movements), and heartburn are common problems of pregnancy; all three may be prevented or helped with some changes in the diet. Nausea usually occurs during the first three months of pregnancy and then disappears. Some of these suggestions may help:

1. Eat something dry (crackers, dry cereal, toast) before getting up.
2. Eat 5 or 6 small meals instead of 3 large meals each day.
3. Drink fluids between meals rather than with meals.
4. Avoid eating greasy or fried foods.
5. Eat lightly seasoned foods; avoid very spicy foods.
6. When preparing foods, keep the room well-aired.

Constipation may be due to normal changes which take place in the mother's body during pregnancy. Lack of exercise, too little liquids, or not enough fiber in the diet may also cause this problem. Try one of these ideas to improve bowel function:

1. Eat more fruits and vegetables, especially ones with skins.
2. Drink more liquids, especially water.
3. Use whole grain products, such as breads and cereals.
4. Exercise regularly, especially by walking.

Heartburn is more common in the last few months of pregnancy because there is increased pressure on the mother's stomach as the baby grows. To help:

1. Eat smaller meals, but eat more often.
2. Reduce the amount of fatty, fried, or spicy foods eaten.
3. Wear looser clothing, especially when eating.

Pica is the desire to eat non-food things, such as laundry starch, ashes, clay, or huge amounts of ice. None of these substances contain any nourishment for the mother and baby, and take up room in the stomach (or interfere with absorption in the intestine) leaving less room for the real food that both need during pregnancy. Cravings are simply desires for lots of any one food or strange combinations of foods.....and are not usually dangerous, as long as one doesn't eat so much as to get sick.

LESSON 9

THE PUZZLE PAGE ???

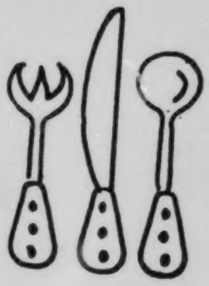
(Worksheet)

Directions:

This is a sheet for a 24-hour diet record. Write down everything that you eat or drink during one 24-hour period. Remember whether it was a week day or a weekend; you usually eat differently on weekends than you do on a week day. Then examine the finished record for foods that might cause or prevent one of the problems that you have been discussing in class.

ITEM	FOOD	AMOUNT	HOW COOKED/PREPARED

LESSON 9



RECIPE PAGE

P.B.R.'s
(Peanut butter and raisin sandwiches)

Equipment needed: table knives
sharp knife
cutting board
plates or napkins for serving

Ingredients: For each double sandwich:
2 pieces of whole wheat bread, toasted, if desired
1/4 cup peanut butter, if possible the chunky style
2 Tbsp. raisins

Instructions: Spread the peanut butter generously on the bread or toast slice. Sprinkle on the raisins and top with second slice of bread or toast. Cut in quarters. Each quarter is about 150 Calories.

Suggestions: Serve the sandwiches with orange or grapefruit juice. The vitamin C in the juice enhances your body's ability to absorb the iron in the whole wheat bread and raisins.

POSTNATAL NUTRITION

LESSON 10

WHICH IS BEST? BOTTLE OR BREAST?

(The Infant's First Food)

**This lesson should be used only if the mother is planning to keep her infant.

FOCUS

Breast-feeding and formula feeding by bottle are both reasonable ways for the teenage mother to feed the young infant. However, the teenaged parent must have an understanding of the advantages and disadvantages of each method before she can make a choice which is appropriate for both her and her baby.

OBJECTIVES

The student will be able to:

1. list three advantages of both breast-feeding and bottle-feeding and three disadvantages of each.
2. make a hypothetical ("suppose" or "what if") choice and defend that choice for her particular situation.
3. demonstrate or describe a proper method of preparing baby formula.
4. identify cow's milk (unmodified) as not a proper food for a young infant.
5. recognize that vitamin/mineral supplements should be given to the infant only on the advice of a medical person.

TEACHER'S NOTES

There is no one right answer to, "Which is best: bottle or breast?": There are as many right answers as there are mothers and infants. The teenage mother should carefully consider the advantages and disadvantages for both infant feeding methods. With that information, she can make the "best" decision for both her and her baby.

Nutritionally, breast milk is superior to formula for most infants; it contains more than just the essential nutrients for growth. It also contains substances which protect the infant from certain bacteria and substances which promote fat digestion. Commercial formulas attempt to copy closely breast milk; infants fed commercial formula seem to grow and develop well. The prepared products are available in several forms: ready-to-feed, liquid concentrate and powdered formula. A combination of breast- and bottle-feeding may be a reasonable alternative when breast-feeding is well established. When bottle-feeding an infant, never put the infant to bed with a formula-filled (or juice-filled) bottle. The milk which collects in the baby's mouth promotes tooth decay (baby bottle caries).

Unmodified cow's milk or diluted evaporated milk is not an appropriate food for the young infant. Both are too low in iron and too high in phosphorus, salt, saturated fat, protein, and minerals.

Depending upon the method of infant feeding the young mother chooses, vitamin/mineral supplements may be required for the infant. The physician, nurse, or dietitian should always be consulted before using such preparations.

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Winick, Myron. *Growing Up Healthy*. New York: William Morrow and Company, Inc., 1982.

INFORMATION HANDOUT

Duplicate and distribute "B-RIGHT IDEAS" to students. Read over the handout with the class or individual student to emphasize particular points and answer questions.

WORKSHEET

Duplicate "THE PUZZLE PAGE" and use as in-class exercise or as a take-home exercise. If sent home, encourage the student to seek the help of others in the family or living group.

SUGGESTED ACTIVITIES

Activity #1: "Breast vs. Bottle"

Preparation:

Collect pamphlets about breast- or bottle-feeding. Possible sources include:

1. WIC agency
2. State Department of Health and Social Services
3. County Extension Home Economist
4. Pharmacies (formula companies provide promotional material...some is good--but be aware that they are trying to sell a particular product).

Activity:

Distribute the pamphlets in class for the students to read. Allow 5-10 minutes for them to be circulated.

Write "BREAST" and "BOTTLE" on the board. Under each, write (+)/(-), advantages/disadvantages, or pros/cons. Ask the students to suggest pros of both methods, then cons of both methods derived from the pamphlets and from their own thoughts, while you or a student notes them on the board.

Activity #1 (continued)

Have the students duplicate the list to be included in their notebooks, or suggest that they make a poster for class display.

If the students feel comfortable, have each student state what she plans to do and why. Encourage differences of opinion by explaining that each mother must decide what's "best" for her and her baby. Also stress that a combination of bottle and breast may be appropriate, once breast milk has become established and if the bottle-feeding doesn't reduce the amount of breast milk produced.

Activity #2: "Card Game: Pro and Con"

(An appropriate activity to reinforce what was learned in Activity #1)

Preparation:
Construct two decks of cards using 3" x 5" cards:

Deck 1: on one side of 3-4 cards print "BREAST FEEDING"
on one side of 3-4 cards print "BOTTLE FEEDING"

Deck 2: on one side of 3-4 cards print "PRO"
on one side of 3-4 cards print "CON"

Activity:
Shuffle each deck, keeping them separate. Have a student pick one card from each deck. She then should from memory state what the card combination calls for (BREAST FEEDING/CON: Others can't feed the baby unless the milk is expressed and bottled).

Activity #3: "What If?": A Card Game

Preparation:
Construct a deck of cards with hypothetical situations. Have students help with the ideas, so that this deck could be used (and added to) in future pregnancy classes. Using information from pamphlets collected in Activity #1, you should be able to concoct about 20 situations. Some ideas include:

1. Immediate family does not support mother's desire to nurse.
2. Mother is in good health and plans on staying home.
3. Mother is in school, but could breast-feed several times a day.

Activity:
Have student draw a card and explain what she would do in that situation and why. Emphasize that breast, bottle, or both are reasonable alternatives.

Activity #4:

Contact WIC Nutritionist, County Extension Home Economist, University Extension Nutrition Specialist, pediatric nurse, public health nutritionist, or dietitian. Ask if he/she would be willing to give a demonstration on several methods of preparing baby formulas. Inquire about the availability of pamphlets that you could get beforehand for the students to read.

Before the demonstration, have the students write down any questions to ask the visitor. If equipment is available at your school, have the students practice correct techniques after the demonstration.

Activity #5: "A History of Infant Feeding"

Preparation:

Duplicate the worksheet (THE PUZZLE PAGE).

Activity:

Distribute the worksheet to the class. Announce that you want them to collect the information for later compilation into a "History of Infant Feeding" booklet.

Activity #5 (continued)

When the worksheets are all completed, have the students review them and put together a collection. While the booklet is being arranged, encourage discussion of how patterns of infant feeding have changed throughout the past several generations. (See Chapter 1, Samuel Fomon's Infant Nutrition, for a good discussion of the topic.)

LESSON 10

B - RIGHT IDEAS

(Information Sheet)

BREAST OR BOTTLE?

Milk is your baby's first proper food. Both breast-feeding and bottle-feeding are reasonable methods of nourishing your young infant. To make the choice of which method is best for both you and your baby, you first need to consider some advantages or disadvantages of each.

Breast milk is nutritionally the best food for almost all babies (some few infants cannot tolerate their mother's milk due to genetic or allergic conditions). The proportions of protein, fat, carbohydrate, minerals, and vitamins are appropriate to the rate of growth of the human baby; it is always warm, clean and ready to use. Breast feeding also will help you lose some of the fat you stored during pregnancy, while it helps protect your baby against some bacteria and aids in his/her digestion. Many mothers prefer breast-feeding because it is a time when they are especially close to their infants.

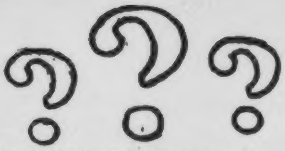
Sometimes, those close to you do not support the practice of breast-feeding, or you may have to return to school or work for much of the day. Commercially prepared formulas are a reasonable alternative to breast milk; their composition and digestibility are similar to human milk. In general, formulas are more expensive than the cost of the extra food you must eat to breast-feed successfully. They take time to prepare, but do allow someone else to feed your baby for you.

Whole cow's milk or diluted evaporated milk are not nutritionally sound choices for the young infant, and should not be used. These products are too low in iron and too high in phosphorus, salt, saturated fat, protein, and some minerals for your baby to grow and develop properly.

A bottle of formula should not be left with the infant when he/she is put to bed. The formula collects in the baby's mouth and can cause tooth decay (baby bottle caries).

Depending upon the method you choose to feed your infant, you may have to supplement the milk or formula with vitamins and minerals. Your physician, nurse, or dietitian should be consulted before you use any vitamin/mineral preparation.

LESSON 10



THE PUZZLE PAGE

(Worksheet)

Directions:

Seek out various members of your family and friends who are willing to share their experiences with you. Ask each woman whether she breast-fed or bottle-fed her infants, and why she made that decision. You may want to tell her some of the points that you have learned in class about both methods of feeding babies and ask her reactions to the information. A "pretend" person is included to give you an idea. Bring the information to class to share with the other students.

When you finish this worksheet, you should have a better understanding of why some of your family and friends chose to breast-feed or bottle-feed their newborn infants.

	Person/Relationship	How Fed Infant(s)	Years	Why?
1.	Samantha, great aunt	breast-fed 7 children	1920-1930	Bottles weren't available in her isolated section of Wisconsin, never considered any other way.
2.				
3.				
4.				
5.				
6.				

LESSON 11

A SOLID BEGINNING

(Introduction of Solid Food in the Baby's Diet)

FOCUS

Introduction of solid food should be delayed until at least four months of age. Both home-prepared and commercially-prepared baby foods can be nutritious for the infant, but costs and availability can vary.

OBJECTIVES

The student will be able to:

1. identify four months as the earliest that solid food should be introduced into an infant's diet.
2. identify sugar and salt as unnecessary additives to any baby food.
3. list two advantages to using home-prepared baby food and two advantages to using commercially-prepared baby food.
4. recognize that iron-fortified baby cereal is a good first source of iron for the infant.
5. recognize that vitamin/mineral supplements should continue to be used only at the advice of the physician.

TEACHER'S NOTES

A baby's only source of nutrition until about 4-6 months should be breast milk or formula. Problems may develop if solid foods are introduced too early to a young developing baby. Allergies may develop or too many calories may be consumed, possibly contributing to obesity. Furthermore, the amount of breast milk or formula which the infant needs may not be consumed when solid foods are also offered.

When solids are introduced, a nutritionally sound order is: iron-fortified cereals (rice, barley, or oats, but not wheat which may cause allergic reactions) offered at about 4-6 months, fruits/juices/vegetables between 5 and 8 months, meat about 8 months, and egg yolk at about 10 months. All solid food should be offered by spoon, *not* in a bottle or a force-feeder.

Either home- or commercially-prepared baby food can be nutritionally adequate. However, sugar or salt should not be added; they are not necessary for the baby's nutrition. Honey should never be used for any infant less than 1 year old; it may be contaminated with *Clostridium botulinum* spores (cause of botulism) which the infant's digestive system cannot destroy.

As during exclusive nursing or formula feeding, vitamin/mineral supplements should be used only with the advice of the physician, nurse, or dietitian.

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Winick, Myron. Growing Up Healthy. New York: William Morrow and Company, Inc., 1982.

INFORMATION HANDOUT

Duplicate and distribute "B-RIGHT IDEAS" to students. Read over the handout with the class or individual student to emphasize particular points and answer questions.

WORKSHEET

Duplicate "THE PUZZLE PAGE" and use as in-class exercise or as a take-home exercise. If sent home, encourage the student to seek the help of others in the family or living group.

SUGGESTED ACTIVITIES

Activity #1: "Times for Solids"

Preparation:

If desired, collect examples of baby foods (cereals, vegetables, fruits/juices, meat, eggs, desserts). Prepare a display for the students.

Activity:

Have the students review the information handout ("B-RIGHT IDEAS"). Write the words "CEREAL", "VEGETABLES", "FRUITS/JUICES", "MEAT", "EGG YOLK", and "DESSERTS" on the board. Ask the students to write down the order in which these foods should be introduced. Also, ask them to write down how soon it is recommended for babies to begin on "solid" foods.

Activity #1 (continued)

Have the students share their ideas. Present the proper order and approximate times: 4-6 months is the earliest that solids should be introduced. The order is:

cereal . . . . . . 4-6 months
fruits/juices/ vegetables . . . 5-8 months
meat . . . . 7-9 months
egg yolk . . . . . about 10 months
desserts . . . . . not necessary, better if eliminated

Activity #1 (continued)

To emphasize that desserts are unnecessary, "X" it out. If you made a display and there are desserts in the display, have the students check the label. (See Lesson 8, "Consumer's Guide to Food Labels" in Appendix B, or "Feeding Babies the Commercial Way" in the Infant Feeding Series). Remind them that the ingredient listed first is the greatest by weight.

Encourage discussion about differences of opinion. Some points to make:

1. No solids should be given before 4 months, and maybe even 6 months. Up until that time, breast milk or formula is nutritionally sufficient for the baby.
2. Starting solids before 4 months does not help the baby "sleep through the night".
3. Some doctors prefer to start vegetables first, some prefer to begin with fruits.
4. Iron-fortified cereal is the best "first solid food" for most babies. Use rice, barley, or oatmeal. Wheat is not recommended for the first cereal because of possible allergic reactions.
5. Wait 3-4 days between each new food introduced, to see if any reactions develop to the food.
6. It is better to use "one-food" products, so, if the baby does become ill, it is easier to determine which food was at fault.
7. If the baby doesn't like a new food, wait a few weeks and try again; don't force a food.
8. Home-prepared or commercially-prepared baby food can be nutritionally adequate, but home-prepared is usually cheaper.

Activity #1 (continued)

Commercially-prepared is more convenient if you and the baby must travel out of the house.

9. Do not use canned foods for home-prepared baby foods; lead levels in the food may be dangerous for the infant.

Activity #2: "The Unnecessaries and the Dangerous"

Preparation:

Collect samples of sugar, salt, and honey (packages, containers, or pictures).

Activity:

Place a sample (labeled) of each before the students. Ask the students to try to determine what these three foodstuffs have in common with respect to infant nutrition. (All are unnecessary for the infant.) Then ask them to identify the one product that is potentially very dangerous to the infant (less than 1 year old), and why.

Honey is not recommended for any baby less than 1 year old, because it often contains spores of Clostridium botulinum (a bacterium) which can grow in the baby's intestines and cause botulism, a sometimes fatal disease which interferes with the baby's ability to breathe and move.

If the students are interested, have several volunteer to check various baby foods on their next trip to the grocery store to see how many and what kinds of baby foods still contain salt and sugar... and report back to the class.

Emphasize that, if a mother chooses to make her own baby food, sugar and salt are unnecessary; emphasize that honey should never be added as a sweetener in home-made baby food.

Activity #3: "The Homemade Way"

Preparation:
Contact the County Extension Home Economist, WIC Nutritionist, Public Health Nurse, or a hospital dietitian to see if one would present a demonstration of preparing home-made baby food. Suggest that (s)he demonstrate use of a sieve, blender, and baby food mill with several different foods.

Activity:
Before the visitor comes, have the students list the advantages of home-made baby foods and the advantages of commercial baby foods. Some ideas appear below; other ideas may be found in the pamphlets listed under References.

1. Home-made foods are generally cheaper; commercial foods may be more convenient, but are generally more expensive.
2. The addition of salt, sugar, and spices can be controlled if the foods are prepared at home.
3. Commercial baby foods need no special storage facilities before use; home-made foods probably need refrigeration or freezing.
4. Canned foods, especially liquids or highly acid fruits and vegetables, should not be used to make baby foods, because these foods may contain more lead than the baby should have.

Activity #3 (continued)

After the ideas have been separated into "for home-made" and "for commercially-made", have the students prepare a poster for display. Alternatively, have the students copy the ideas into their notebook.

Activity #4:

Tell the class that you would like each one of them to bring a book about home-made baby foods, a suggestion for a recipe, or a pamphlet about home-made baby foods into class. Suggest the public or school library, help from someone at home, or one of the support agencies (WIC, Extension Office or Public Health Nurse) as possible resources.

Review the recipes for nutritional value. If the facilities at school permit, have the students try some of the simpler recipes. Have the students decide which recipes (either read or tried) they would like to keep; have them prepare a small booklet of recipes for their later use.

LESSON 11

B - RIGHT IDEAS

(Information Sheet)

A SOLID BEGINNING

Until your baby is somewhere between 4 and 6 months old, all of his or her nutritional needs (with the exception of some vitamin and minerals from supplements) can be met by either breast milk or formula. Four months is the earliest that you should try feeding your baby solid foods. Begin with iron-fortified cereal (rice, oatmeal, or barley...wheat cereal can cause allergic reactions). Later (at about 5 months), you can introduce either vegetables or fruits or their juices, then meats at about 7 months, and egg yolks at about 10 months. Egg whites may cause allergies and therefore are usually not fed until the baby is over a year old. All foods should be fed with a spoon, not in a bottle or in a force-feeding device. Both commercially-prepared and home-prepared baby foods can be nutritionally adequate; both types have particular advantages, and storage requirements vary for each.

Most commercially-prepared baby food contains little or no salt, and the amount of sugar in most commercial baby food has been decreased. However, home-made baby food need have neither sugar nor salt added; both are unnecessary for your infant. Never use honey in home-made baby food or as an additive to commercial baby food, if your baby is less than a year old. Sometimes honey can contain spores of a bacterium that can cause a serious, sometimes fatal, disease called "botulism" in infants. Likewise, do not use canned foods (especially liquids or highly acid fruits and vegetables) to prepare baby food. These foods may contain more lead than the baby should have.

Remember that it is important to introduce new foods into your baby's diet slowly, allowing about 3-4 days between new foods to make sure that the new food agrees with your baby. Remember, also, that either breast milk or formula will still be a major part of your baby's diet; solid foods should not replace the amount of formula or breast milk your doctor recommends that your baby consume each day. Your doctor or nutritionist may recommend that you continue vitamin/mineral supplements after you begin introducing solid food into your baby's diet.

LESSON 11

THE PUZZLE PAGE

(Worksheet)

Directions:

Below are some "Crazy Combinations". To solve the puzzlers, fill in the blanks at the bottom of the page in the statements about introducing solids into your baby's diet...or work both parts at once, if you dare! An example is done to show you how.

A. 3 + 1 juicy things to eat   F O U R   F R U I T S

B. A super-hot metal   W _ _ _ _   I _ _ _

C. A less expensive seasoning   C _ _ _ _ _ _   S _ _ _

D. A grain container   W _ _ _ _   B _ _ _ _ _

E. Sweet non-liquids   S _ _ _ _   S _ _ _ _ _

F. Chicken's obstetrician   E _ _   D _ _ _ _ _

G. Bee infant   H _ _ _ _   B _ _ _

1. The earliest time to introduce solids into your baby's diet is (A) _ _ _ _ months.
2. (B) _ _ _ _-fortified baby cereal is a good first food for your baby.
3. (D) _ _ _ _ _ and (F) _ _ _ (B) _ _ _ _ _ _ may cause allergies in babies less than one year old.
4. Home-made baby food is usually (C) _ _ _ _ _ _ _ than commercially-prepared baby food.
5. (G) _ _ _ _ _ should never be fed to a young infant; bacteria in it could cause botulism.
6. Neither (C) _ _ _ _ nor (E) _ _ _ _ _ _ are necessary in any baby food.
7. (A) _ _ _ _ _ _ or vegetables may be introduced to your baby at about five months.
8. (E) _ _ _ _ _ _ should always be offered on a spoon, never in a (D) _ _ _ _ _ _ or a device which forces the baby to eat.
9. Check with the (F) _ _ _ _ _ _ about use of vitamin/mineral supplements after you begin to add solids to your baby's diet.
10. Both commercially- and home-prepared (G) _ _ _ _ food can be nutritionally adequate for your baby.

LESSON 12

GRADE "A" THE NATURAL WAY

(Nutrition During Lactation)

FOCUS

The diet of a nursing mother directly affects the quality and quantity of her milk. Specific recommendations have been made for increasing several nutrients, as well as for increased caloric intake. Since most substances eaten by the mother can be transferred to the milk, all drugs should be used with extreme caution and only with the advice of a physician. Birth control pills are best not used when nursing. Again, check with the doctor.

OBJECTIVES

The student will be able to:

1. recognize that a nursing mother should increase her energy intake (by about 500 kcal. a day), her protein intake (by about 20 grams a day), and her fluid intake (to total about 2 to 3 quarts a day) to produce an adequate supply of high quality milk.
2. list one food and the amount of that food which would meet the increased needs for calories, protein, and fluid during nursing.
3. identify vitamin C, vitamin E, and folacin as nutrients which must be increased in the diet of the lactating mother.
4. state two food sources for each: vitamin C, vitamin E, and folacin.
5. recognize that any drug which the mother takes might enter the milk and be transferred to the infant. This includes the hormones in oral contraceptives (birth control pills).

TEACHER'S NOTES

The lactating (nursing) teenager needs to increase her protein, energy, and fluid intakes both to maintain her own body and growth and to produce enough high quality milk for her infant. A poor maternal diet may hinder the nursing mother's health status from returning to an acceptable non-pregnant condition and may cause a decrease in the volume of breast milk. Usually the protein, fat, and carbohydrate levels of the milk are not significantly changed if the diet is inadequate, but vitamin levels may decrease and the health status of the infant could be endangered.

During nursing, drugs should be used only with the advice of a physician. Since oral contraceptives (birth control pills) contain hormones which can reduce milk supply and which can be transferred to the infant through the milk, an alternative form of birth control should be used while nursing.

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Worthington-Roberts, Bonnie S.; Vermeersch, Joyce; and Williams, Sue Rodwell. Nutrition in Pregnancy and Lactation. 2nd ed. St. Louis: The C. V. Mosby Company, 1981.

INFORMATION HANDOUT

Duplicate and distribute "B-RIGHT IDEAS" to students. Read over the handout with the class or individual student to emphasize particular points and answer questions.

WORKSHEET

Duplicate "THE PUZZLE PAGE" and use as a take-home exercise, an individual in-class exercise, or a group in-class exercise (see Activity #6). If given as a take-home exercise, encourage the students to get help from others at home in answering the questions.

SUGGESTED ACTIVITIES

Related Activities in other lessons:

Lesson A-1,
  Activity #1: Vitamin A and vitamin C content of vegetables
  Activity #2: Vitamin A and vitamin C content of fruits
  Activity #5: Food preparation: "Orange Cooler" which contains vitamin C and folacin

Lesson A-3,
  Activity #1: Exploring a variety of calcium-rich dairy foods
  Activity #2: Alternative calcium sources if drinking milk is not possible
  Activity #4: Food preparation: "Yo-cot Parfait", using yogurt or cottage cheese

Lesson A-5,
  Activity #3: Comparison of nutrient content of various beverages

Lesson 5,
  Activity #1: Vitamins A, C, D, and folacin in teen diets
  Activity #2: Food preparation: "ACDFolacin Flapjacks"

Activity #3: Worksheet emphasizing vitamins A, C, D, and folacin

Activity #1: "What My Choice?"

Preparation:

Collect empty cartons and containers of various kinds of drinks. Add a label to each which describes the protein content and kilocalories in 3 cups of each. Suggestions follow:

whole milk	475 Kcal.	25 g. protein
chocolate milk	640 Kcal.	25 g. protein
orange juice	330 Kcal.	6 g. protein
beer	300 Kcal.	3 g. protein
cola drink	290 Kcal.	0 g. protein
coffee	25 Kcal.	0 g. protein
vanilla shake	900 Kcal.	30 g. protein

Make use of the nutrition information labels, if already on the containers.

Activity:

Ask the students to compare each drink with the recommended increase of 500 Kcal. and 20 grams of protein each day during nursing. Ask them which would be the better choice(s) and why. Milk is probably the best choice from the information given; accepting chocolate milk as an answer is reasonable, if this is the only one that appeals to the student, even though the calorie content is a bit high.

Activity #2: "Imaginary Dishes"

Preparation:

Duplicate the handout ("B-RIGHT IDEAS") for the students.

Activity #2 (continued)

Activity:

Distribute the handout. Using suggestions from the handout for increasing vitamin C, vitamin E, and folacin in the nursing mother's diet, have the students suggest ways to combine foods in one "dish" to help meet the increased needs. Some suggestions follow:

- chef salad: lots of greens, boiled egg and high-C vegetables, with oil-based dressing
- drink made with orange juice and milk, raw egg yolk, a touch of oil and honey, whipped up a blender
- whole grain bread with cheese and mayonnaise with sliced tomato
- orange and grapefruit salad sprinkled with wheat germ

Be willing to entertain seemingly bizarre combinations...emphasize that the "dish" should be one which they would willingly eat. If facilities permit, write down ideas and try a simple one in class.

Activity #3: "I'd Never Give My Baby Drugs!"

Preparation:

Collect drug containers, pictures of drugs from magazines, or samples of the actual item. Enlist the aid of the students in collecting, if desired. Organize a display for the students with a label indicating that all these substances are drugs. Suggestions include: any over-the-counter drugs, prescription drugs including birth control pills, "illicit" drugs such as marijuana, caffeine (tea, coffee, cola drinks, chocolate), nicotine (cigarettes), alcohol (both as a beverage and in medicines such as cough syrups), vitamin/mineral supplements.

Activity #3 (continued)

Activity:

Discuss that all these items are drugs and all will be found to varying degrees in the mother's milk. Try to elicit discussion from the students about their feelings and use of these substances, especially during nursing.

A visual aid might be a doll set up with a can of beer in one hand and a cigarette in the other...to emphasize that, indeed, this is what the baby would be getting.

Activity #4: "Old Wives' Tales"

Ask students to bring in one "old wives' tale" about nursing from home. Discuss the ones related to nutrition to discover why they might be true or false, or a little bit of both.

For example:

"Drinking beer increases milk or is good for the baby". Beer is alcoholic and the alcohol gets into the milk and, in excess, may harm the baby. The beer also increases liquid in the diet (at the expense of other, more nutritious fluids?), so it might help milk production. Alcohol may help relax the mother so the "let-down reflex" comes easier.

Activity #4 (continued)

If the students are interested, suggest that each one take a question to their physician, for another opinion, especially questions not specifically related to nutrition. Have them share the answers with the class. (Refer to the Brody and the Farb/Armelagos books for discussions of myths associated with nursing.)

Activity #5:

Ask the students to go to the public library (as a class or singly) and locate any books on breast feeding to bring back to class to share. Most of these books will contain a chapter on nutrition. Seek out sections of the books that deal with the particular nutrients mentioned in this lesson and find ideas for simple in-class food preparation.

Activity #6:

Duplicate the worksheet and do it as an in-class group exercise. Suggest the students write down several suggestions for each part.

LESSON 12

B - RIGHT IDEAS

(Information Sheet)

Mamm-o-gram   To: The Nursing Mom   Concerning: Achieving Grade "A"

If you plan to nurse, your diet needs several changes so that your body can produce enough high quality milk for your infant. The extra calories, protein and fluid needs can handily be met by drinking 2 to 3 extra cups of whole milk each day. This represents about 500 Kcalories and about 25 grams of protein and some of the extra fluid required to produce the 2 to 4 cups of milk that your baby will need.

Vitamin C, vitamin E, and folacin (a B vitamin) needs also increase during nursing. An extra food high in each of these nutrients should be added to your diet each day. Here are some suggestions:

Vitamin C (Since vitamin C is destroyed by heat, "raw is best"): citrus fruits and juices (orange, grapefruit), strawberries, broccoli, green peppers, cabbage, tomatoes, cantaloup

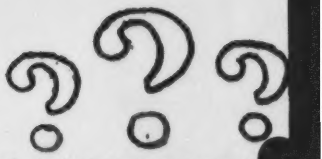
Vitamin E: vegetable oils and margarine, egg yolks, wheat germ, leafy green vegetables, whole grain cereals and products, mayonnaise

Folacin: leafy green vegetables, organ meats (such as liver), broccoli, oranges, whole grains, egg yolks, avocados, legumes

Drugs include a whole variety of substances: over-the-counter medications (no prescriptions needed), prescription drugs (including birth control pills), alcohol, caffeine (coffee and tea), nicotine (cigarettes), and "street substances" such as LSD, marijuana or angel dust. It is best to take only drugs prescribed by a physician while you are nursing because your infant deserves the best, "cleanest" food that you can provide. Even vitamin/mineral supplements should have your doctor's okay.

Birth control pills are prescription drugs which contain hormones. Besides entering the milk, these substances can reduce your milk supply. You might want to consider another method of birth control while nursing.

LESSON 12



THE PUZZLE PAGE

(Worksheet)

Directions:

Each of the menus below could be improved for the nursing mother, either by an addition or substitution of a food. Can you suggest a nutritious food and an amount of that food that fits the suggestion mentioned with each menu?

Menu I.....suggest an addition to increase fluid ________________

bowl of chili
cole slaw
ice cream cone
corn bread
glass of water

Menu II....suggest a substitution to increase calories ________________

glass of skim milk
green salad
banana
hamburger
french fries

Menu III...suggest a substitution to increase protein ________________

bread & butter sandwich
glass of soda
two candy bars
apple
potato chips

Menu IV....suggest an addition to increase vitamin C ________________

hot dog and bun
pickles and relishes
corn chips
milk shake

Menu V.....suggest a substitution to increase vitamin E ________________

white enriched bread with peanut butter and jelly
orange
celery sticks
glass of skim milk

Menu VI....suggest a substitution to increase folacin ________________

ham steak
scalloped potatoes
glass of skim milk
carrots
white dinner foll, butter

Menu VII...suggest an addition to increase protein ________________

green salad
ice cream sundae
taco
orange pop

Menu VIII..suggest an addition to increase calories ________________

cheese and pepperoni pizza
diet soft drink

Menu IX....suggest both an addition and a substitution to increase protein ________________

2 slices of whole wheat toast with butter
glass of orange juice
coffee

LESSON 12

ANSWERS TO "THE PUZZLE PAGE"

These are only suggestions for menu additions and substitutions; a variety of others are possible. Use the information handout as a guide.

Menu I: glass of milk, glass of juice, extra water

Menu II: glass of whole milk for skim milk, glass of chocolate milk for skim milk, cheeseburger for hamburger

Menu III: peanut butter sandwich for bread and butter sandwich, milk for glass of soda, ice cream sandwich for two candy bars, dry roasted peanuts for potato chips, meat or cheese sandwich for bread and butter sandwich

Menu IV: orange, orange juice, fresh tomato, green salad, cole slaw

Menu V: whole wheat bread for white bread, egg salad sandwich for peanut butter and jelly

Menu VI: liver and onions for ham steak; broccoli, spinach, or collards for carrots; whole grain roll for white roll; whole milk for skim milk; brown rice for scalloped potatoes

Menu VII: more cheese on the taco, refried beans or a burrito, cheese on the salad, glass of milk, another taco

Menu VIII: extra pizza, glass of milk, salad, piece of fruit, dried fruit, peanuts

Menu IX: add an egg and change black coffee to milk, or add milk to coffee; substitute peanut butter for butter; substitute cheese spread for butter; add a glass of milk

LESSON 13

HELP IS IN YOUR OWN "BACKYARD"

(Nutrition Information Available in the Community)

FOCUS

Various local and state agencies and individuals can help the pregnant teenager and teenage parent by providing answers to nutrition questions and by providing assistance in getting nutritious foods for her and her infant.

OBJECTIVES

The student will be able to:

1. identify three local individuals or agencies and one state or federal agency that provide information about food for pregnant or nursing teenagers and their infants.
2. identify community agencies which can supply birth control information.

TEACHER'S NOTES

Nutrition information and services for pregnant teenagers and teenaged mothers and their infants are not uniformly available across the areas of Wisconsin. The Wisconsin State Department of Health and Social Services (DHSS) publishes a series of Infant Feeding pamphlets developed by public health nutritionists. The federally-funded Women, Infants, and Children Program (WIC) is operated through DHSS and provides food vouchers and nutrition education to selected infants and mothers. Likewise, Maternal and Infant Care projects (federal) provide health care which complements the WIC programs.

The federal Food Stamp Program, usually administered locally at the county level, provides increased food purchasing power to lower-income households. County Extension Home Economists can offer answers to nutritionally related questions and have available a variety of pamphlets and booklets on nutrition during pregnancy, lactation, and infancy.

Some communities are fortunate to have local physicians, nurses, and nutritionists whose special interest is teenaged pregnancy; these persons are excellent sources of nutrition information or of information of where further to look.

The National March of Dimes furnishes booklets on nutrition during pregnancy, with special reference to prevention of birth defects (such as FAS); both the Wisconsin Clearinghouse for Alcohol and Other Drug Information and the American Cancer Society publish information on drug-related problems of pregnancy.

The area-wide office of Planned Parenthood can either provide birth control information to the new teenaged mother or can refer her to other services that are available.

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Local Phone Book: Yellow Pages

INFORMATION HANDOUT

Duplicate and distribute "B-RIGHT IDEAS" to students. Read over the handout with the class or individual student to emphasize particular points and answer questions.

WORKSHEET

Duplicate "THE PUZZLE PAGE" and use as in-class exercise or as a take-home exercise. If sent home, encourage the student to seek the help of the others in the family or living group.

SUGGESTED ACTIVITIES

Related Activities in other lessons:
- Lesson 6,
  - Activity #6: Guest lecturer: nutritional dangers of drugs during pregnancy
- Lesson 10,
  - Activity #4: Guest lecturer: demonstration of baby formula preparation
- Lesson 11,
  - Activity #3: Guest lecturer: demonstration of home-made baby food preparation

Activity #1:

Contact your county Department of Social Services and the county University of Wisconsin Extension Office. Alternatively assign one student to contact each agency.

Activity #1 (continued)

Request a list of all programs which offer nutrition information or services to pregnant teenagers or teenaged mothers and their infants and a list of all free or low-cost publications available through that office.

Prepare a display of pamphlets, booklets, and resource agency persons for the students. Summarize the services during a discussion with the class; encourage the students to add to the list of resources themselves. Ask the students to add the information to their notebooks for future use. The students may also want to prepare a poster or bulletin board display for the current use of the class.

13/3

Activity #2:

Contact the staff from the local Women, Infants, and Children (WIC) Program. Arrange to have a guest speaker come present a session on the nutritionally related service(s) that the program offers to teenagers who are pregnant or mothers and infants. Request that the visitor provide copies of any free pamphlets that are available or explain the availability of low-cost publications from the agency. Obtain the printed material beforehand.

Before the visit, allow the students to look at any pamphlets or booklets which have been provided. Ask that each student write down (or have ready, orally) at least one question for the visitor relating to nutrition services or information.

Activity #3:

Determine (Yellow Pages of Phone Book or by inquiring at your local hospital) if your area has a "Dial-a-Dietitian" service. If one is available, explain to the students about the service and request that each student formulate a question about nutrition during pregnancy or lactation or nutrition of infants. Suggest that each student call the number listed and report back to the class. Suggest that the students make notes of the answers.

Activity #3 (continued)

Alternatively, if the class has access to a phone during school hours (and if these hours coincide with the times of the service), make the phone calls during class time.

If your area does not have the "D-a-D" service, invite a dietitian from your local hospital to address the class on some aspect of teenage nutrition or infant nutrition. Have the students, before the visit, write at least one question each to ask the visitor.

Whichever method is used, suggest that the students compile the questions and answers to include in their notebooks for future reference.

Activity #4:

Duplicate the worksheet (THE PUZZLE PAGE) and/or make a transparency of it. Work on filling in the agencies or individuals in your community that can provide nutrition information and/or services to the pregnant teenager or to the teenaged mother and her infant. Emphasize that this list should be kept for future use by the young mothers.

The students may want to put together a small pamphlet for later classes to use and to amend.

Activity #5:

If school policy allows, contact your area Planned Parenthood Association. Request that a representative visit the class and furnish printed information for the students, if possible.

LESSON 13

B - RIGHT IDEAS

HELPFUL COMMUNITY AGENCIES AND INDIVIDUALS

(Information Sheet)

Your local community may have several resources for obtaining nutrition information or services for you while you are pregnant, and for you and your baby after the baby is born. Your county Department of Social Services and your county Extension Home Economist are two good starting places. Your teacher can help you make the contact, if you feel uncomfortable doing it by yourself; alternatively, your school counselor could also help. Not only can these agencies provide several services and some printed information, they can also give you suggestions of where to look further, due to the network that may exist between people who are interested in helping pregnant teens and their children.

The WIC Program is a federally-funded, state and county run program which provides food vouchers (spent like checks at the grocery store) for particular foods to women of "at risk" pregnancies and mothers and infants who remain "at risk". The Food Stamp Program, another federally-funded program, can provide increased purchasing power to lower-income persons.

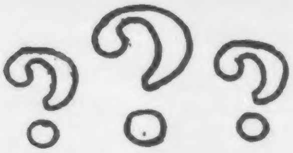
Some agencies (The National March of Dimes, Wisconsin Clearinghouse for Alcohol and Other Drug Information, the American Cancer Society) provide informative, free brochures dealing with various aspects of nutrition and drug problems during pregnancy.

Some communities are fortunate to have local doctors, nurses, and dietitians whose special interest is teenage pregnancy; these persons are excellent resources for you and your baby. Use them well, and recommend them to other pregnant teens and teenage [illegible]ers.

Lastly, your area-wide office of Planned Parenthood (check the Yellow Pages) can provide birth control information or can refer you to other services that are available in your community.

LESSON 13

THE PUZZLE PAGE



(Worksheet)

Directions:

Fill in the table below with as many names of agencies and persons whom, you know, can furnish you with nutrition information and/or services for you and your baby. Draw from classroom discussions, looking in the "Yellow Pages", personal experience, and personal advice from others. Keep this sheet for further reference. A few examples are given to provide some hints.

	Agency/Group/Individual	Phone Number/ Location	Services/Information Available
1.	Women, Infants, and Children (WIC) Program		food vouchers for "at risk" pregnancies and mothers/infants
2.	County Dental Society		information about "baby bottle caries" and fluoride supplements
3.	Food Stamp Program		
4.	Wisconsin State Department of Health and Social Services/Madison		information on services in your area publications on infant feeding
5.			
6.			
7.			
8.			
9.			
10.			

APPENDIX A

LESSON A-1

A. C. FIBER AND COMPANY

(The Fruit and Vegetable Group)

FOCUS

The fruit and vegetable group is the main source of vitamins A and C and is a good source of fiber. In some cases, these foods may be a good source of fiber. In some cases, these foods may be a good source of calcium. The foods are available in a wide selection of forms (fresh, frozen, liquid, canned and dried).

OBJECTIVES

The student will be able to:

1. identify this group is a primary source of vitamins (A, C, riboflavin, folate) and minerals (iron, magnesium, calcium) and is a good source of fiber.
2. describe 3 serving sizes for 3 different foods in this group.
3. state that a non-pregnant teenager needs at least four servings from this group daily, one of which should be vitamin C-rich.
4. identify three vitamin C foods and three vitamin A foods from this group.

TEACHER'S NOTES

Vegetables and fruits contribute vitamins A and C and also fiber. Peels and edible seeds are especially rich in fiber. Dark-green and deep-yellow vegetables are good sources of vitamin A. Most dark-green vegetables, if not overcooked, are also reliable sources of vitamin C. So are melons, berries, tomatoes, and citrus fruits (oranges, grapefruit, tangerines, lemons, etc.). Dark-green vegetables, in addition, are valued for riboflavin, folacin, iron, and magnesium. Certain greens--collards, kale, mustard, turnip, and dandelion--provide calcium. Nearly all vegetables and fruits are low in fat (avocado is one exception), and none contain cholesterol.

--from: The Hassle-Free Guide to a Better Diet, USDA

REFERENCES

Davis, Carole A., and others. Food. Home and Garden Bulletin No. 228. U. S. Department of Agriculture. Washington, D.C.: U. S. Government Printing Office, 1979.

Katt, Sally, ed. "What's to Eat?", and Other Questions Kids Ask About Food. Yearbook of Agriculture, 1979. Washington, D.C.: U. S. Government Printing Office, 1979.

Nutrition Source Book. Rosemont, Illinois: National Dairy Council, 1978.

INFORMATION HANDOUT

Duplicate and distribute "B-RIGHT IDEAS" to students. Read over the handout with the class or individual student to emphasize particular points and answer questions.

WORKSHEET

Duplicate "THE PUZZLE PAGE" and use as in-class exercise or as a take-home exercise. If sent home, encourage the student to seek the help of others in the family or living group.

SUGGESTED ACTIVITIES

Activity #1: "Rate the Veggies"

Materials:
- 4 small index cards (or pieces of paper) per student
- felt-tipped pen
- tooth-picks, small plates or pieces of aluminum foil
- an assortment of vegetables which are good sources of vitamin A and C. Suggestions are below.
- knives (optional)
- Vitamin A-rich vegetables: carrots, sweet potatoes, spinach, winter squash, pumpkin.
- Vitamin C-rich vegetables: cabbage, potatoes, tomatoes, broccoli, green peppers.

Preparation:

If no food preparation facilities are available, prepare the vegetables beforehand. Cut into 'tasting-sized' pieces. Leave as many as possible raw. Some will require cooking (e.g., sweet potatoes, squash, pumpkin, potatoes) and can be gently steamed and cooled. If food preparation facilities are available, preparation could be done in the classroom. If prepared beforehand, bring to class in a well-chilled cooler or keep in the refrigerator until use.

Activity #1 (continued)

Activity:

Pass out a plate and a few toothpicks to each student. Pass out 4 cards (or paper) to each student. Ask that they number the cards with large numerals from "1" to "4", using the felt-tipped marker. Write the following on the board:

1 = "Yuck"
2 = "Not one of my favorites"
3 = "Passable; it'll do"
4 = "An absolute winner"

Pass samples of each vegetable, one at a time. Have each student rate the vegetable by holding a numbered card. The teacher should then ask one student to identify what vitamin (A, C, or both) that the vegetable contains and another student to identify the proper serving size and another to suggest some way that the vegetable might be included in a teenager's diet. Be sure to call on both high and low scorers.

Encourage each student to try each food, but do not insist. Stress that the non-pregnant teenager needs 4 servings of fruits and vegetables each day (pregnant needs 5), and that one (two for pregnant) should be vitamin C-rich food and that a vitamin A-rich food should be eaten several times a week.

Activity #2: "The Fruit Connection"

Repeat Activity #1, using fruits instead of vegetables. Some suggestions follow:
Vitamin A-rich: apricots, peaches, cantaloup
Vitamin C-rich: oranges, grapefruit, lemons, strawberries, tomatoes, tangerines, cantaloup

Activity #3: "Get Your Fiber Here!"

Materials:
pictures from magazines or fresh samples of high fiber foods...to display or to taste. Suggestions include: apples, carrots, celery, corn, grapefruit, grapes, green beans, lettuce, lima beans, peas, plums, potatoes with skins, prunes, raisins, tomatoes.

Activity:
Ask the students what these foods might have in common (dietary fiber and relatively low caloric content).

Explain that dietary fiber is the hard, woody or stiff substance in plants (mainly indigestible carbohydrate) which helps in eliminating food residues from the body... that is, it helps prevent constipation.

Activity #4: "Calcium Without the 'Moo'"

(This activity would be especially appropriate in a class with Black or Asian students, because milk is sometimes lacking in their diets.)

Materials:
Pictures or fresh samples of collards, mustard greens, kale, dandelion greens, and turnip greens.

Activity:
Ask the students to bring in recipes (oral or written) using these products...ones that their families or living groups use. The following day, have the students share the recipes with the class. Encourage the students to save the recipes which would be useful to them, perhaps adding them to their notebooks.

Stress that these green vegetables are a good source of calcium (see Mini-Food Composition Table in Appendix B), especially for those individuals whose consumption of dairy products is not adequate.

Suggest that the greens are best if not overcooked or not cooked with baking soda, and that the pot liquor is nutritious and can be used in soups, stews, and mixed with other juices, such as tomato juice.

Activity #5:

Prepare "Orange Cooler". The recipe and instructions are on a separate sheet of paper so they may be duplicated and distributed to the students. Encourage the students to add the recipe to their notebooks, if they are keeping them. This drink is a good source of both vitamin C and calcium.

Activity #6:

Ask students to bring simple recipes from "home" which use either a vitamin A-rich or vitamin C-rich food. Encourage them to share with the rest of the class. Suggest that the group write up a short collection of the recipes to be duplicated and shared with all the "at home folk".

Activity #7:

Make a transparency of the crossword puzzle on the worksheet (THE PUZZLE PAGE) and do it together as a class activity, using the

Activity #7 (continued)

information sheet (B-RIGHT IDEAS) as a reference. Answers are included on another sheet of paper.

.... GIGGLES ....

Hi: What do you get when you cross a grape with a lion?
Lo: A grape nobody picks on.

Ned: Why did the farmer go over his field with a steamroller?
Ted: He wanted to raise mashed potatoes.

He: Where did the baby ear of corn come from?
She: The stalk brought it.

B - RIGHT IDEAS

(Information Sheet)

THE VEGETABLE AND FRUIT GROUP

This group includes all fruits and vegetables and is important for its contribution of vitamins A and C and fiber, although individual foods vary widely in how much of these they provide. Dark-green and dark-yellow vegetables are good sources of vitamin C, as are citrus fruits (oranges, grapefruit, tangerines, lemons), melons, berries, and tomatoes. Dark-green vegetables are valued for riboflavin, folacin, iron, and magnesium as well. Certain greens -- collards, kale, mustard, turnip, and dandelion -- provide calcium. Nearly all vegetables and fruits are low in fat, and none contain cholesterol.

A serving is 1/2 cup, or a typical portion -- one orange, half a medium grapefruit or cantaloup, juice of one lemon, a wedge of lettuce, a bowl of salad, and one medium potato. A non-pregnant teenager needs 4 servings each day (a pregnant teenager needs 5 servings).

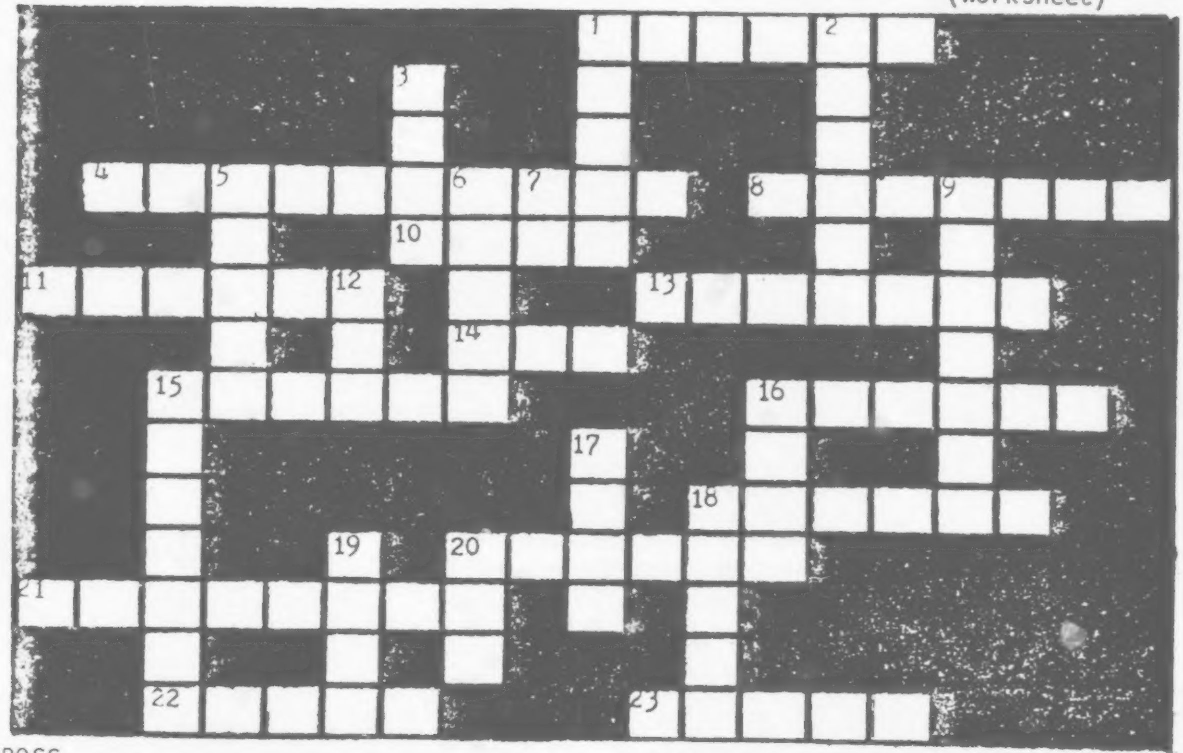
Include one good vitamin C source each day. Also frequently include deep-yellow or dark-green vegetables (for vitamin A), and unpeeled fruits and vegetables and those with edible seeds, such as berries (for fiber).

-- revised from: Food, USDA

LESSON A-1

THE PUZZLE PAGE

(Worksheet)



ACROSS

1. _____ and vegetables
4. Broccoli, cabbage and green peppers are vitamin C-rich _____.
8. Turnip tops supply _____.
10. Not high in A or C, but a juicy fruit.
11. I wear a brown coat and am high in vitamin C.
13. After digesting food, the body _____ it.
14. The best way to eat many fruits and vegetables.
15. Skinny and green and full of fiber.
16. Monkey food (and people food).
18. _____ fruits and vegetables have more vitamin C than canned.
20. Plums in their old age.
21. Super A and C food.
22. What you don't remove from apples
23. _____ pepper is a versatile veggie.

DOWN

1. A "regular" part of your diet.
2. Both a fruit and a vegetable.
3. Something to catch a bear.
5. A raisin in infancy.
6. A seedy character.
7. Apple pie, a _____ mode.
9. In cole slaw, a super source of vitamin C.
12. The number of servings of C-rich foods a non-pregnant teen needs each day.
15. High A vegetable.
16. Where many veggies are found: salad _____.
17. Teens need _____ servings of fruits and vegetables each day.
18. Apples have _____ seeds than strawberries.
19. Ear! Ear!
20. A neat treat: pumpkin _____.

1

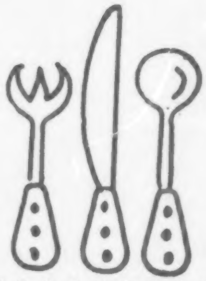
ANSWERS TO CROSSWORD PUZZLE

ACROSS

1. fruits
4. vegetables
8. calcium
10. pear
11. potato
13. absorbs
14. raw
15. celery
16. banana
18. frozen
20. prunes
21. broccoli
22. skins
23. green

DOWN

1. fiber
2. tomato
3. trap
5. grape
6. berry
7. la
9. cabbage
12. one
15. carrots
16. bars
17. four
18. fewer
19. corn
20. pie



RECIPE PAGE

Orange Cooler

Equipment needed: blender
measuring cup and spoons
spatula
paper cups

Ingredients: 6-ounce can frozen orange juice concentrate
1 cup whole milk
1 cup water
1/2 teaspoon vanilla
1/4 cup sugar (optional)
10 ice cubes, crushed

Instructions: Place all ingredients in a blender.
Cover and blend until smooth.
Serve immediately.

6 servings, about 3/4 cup each
115 Calories per serving
(made with milk)

Suggestions: Substitute 1 cup of vanilla ice cream for the cup of whole milk and the sugar, for a thicker, more dessert-like drink. The Calorie count remains about the same, but the fat content would increase.

LESSON A-2

NUTRITION IS THE NAME OF THE GRAIN

(Breads and Cereal Foods)

FOCUS

Grain foods are an important source of B vitamins and minerals (iron and magnesium), and a good source of fiber. This group contains whole grain and enriched products only.

OBJECTIVES

The student will be able to:

1. identify this group as a major source of B vitamins, iron, carbohydrate, and protein.
2. list serving sizes for 3 different foods in this group.
3. recognize that a non-pregnant teenager needs at least four servings a day from this group.
4. differentiate between "whole grain" and "enriched".
5. evaluate the relative sugar content of breakfast cereals given a list of ingredients.

TEACHER'S NOTES

Whole grain and enriched breads and cereals are important sources of B vitamins, iron, and protein. They are a major source of protein in vegetarian diets. Whole grain products contribute magnesium, folacin, and fiber. Foods in the bread and cereal group include all products made with whole grains or enriched flour or meal.

Buying unsweetened cereals allows the consumer control over the amount of sugar added; a few presweetened cereals contain more than 50 percent sugar. The sugar content of some ready-to-eat cereals is listed on the label.

--from: The Hassle-Free Guide to a Better Diet, and Food, USDA

REFERENCES

Davis, Carole A., and others. Food. Home and Garden Bulletin No. 228. U. S. Department of Agriculture, Washington, D.C.: U. S. Government Printing Office, 1979.

Katt, Sally, ed. "What's to Eat?", and Other Questions Kids Ask About Food. Yearbook of Agriculture, 1979. Washington, D.C.: U. S. Government Printing Office, 1979.

Nutrition Source Book. Rosemont, Illinois: National Dairy Council, 1978.

Tannahill, Reay. Food in History. New York: Stein and Day Publishers, 1973.

INFORMATION HANDOUT

Duplicate and distribute "B-RIGHT IDEAS" to students. Read over the handout with the class or individual student to emphasize particular points and answer questions.

WORKSHEET

Duplicate "THE PUZZLE PAGE" and use as in-class exercise or as a take-home exercise (see Activity #6). If sent home, encourage the student to seek the help of others in the family or living group.

SUGGESTED ACTIVITIES

Activity #1: "A Tasting Experience"

Preparation:

Contact a local restaurant or delicatessen which serves a variety of breads on its menu to obtain a few slices or pieces of various kinds of bread products. It would be helpful to get the wrappers which the bread came in, if the students would later have questions about the breads (ingredients, brand, etc.).

Since the objective of this exercise is to broaden the "tasting experience", include the old standby white enriched bread, but choose a variety of whole grain products, too. Suggestions include: white enriched bread, rye, whole wheat (several varieties), bran, corn, pumpernickel, whole wheat or white enriched bagels, oatmeal, enriched sour dough, and any "specialties of the house".

Activity:

Serve the breads as "bread-and-butter" (or margarine) sandwiches, or as small portions which the students can sample with butter or margarine. Tell them that they are members of a taste panel and have them rate the breads as to taste, texture (fine, coarse), smell, appearance, and--most important--as to their like or dislike. Explain that all these products are in the grain group, and that non-pregnant teenagers need at least 4 servings a day (pregnant teenagers need at least 5 servings). Suggest that the students convince someone else in their household to try the new product that they liked best.

Activity #1 (continued)

Activity #2: "The Brown and White of Bread"

Preparation:

Prepare a display of a loaf of enriched white bread and a good quality whole wheat bread; have the wrappers available for the students to examine.

Activity:

Ask the students to identify the differences between the two products by reading the list of ingredients and by examining the products by touch, taste, sight, and smell.

Emphasize that while both products are good sources of carbohydrates, vitamins, and protein, the whole wheat product is also a source of magnesium (a mineral), folacin (a B vitamin), and fiber (roughage, bulk---which aids in bowel function). Both enriched white bread and whole grain bread contain iron. Enriched white flour products have only a portion of the nutrients

Activity #2 (continued)

(niacin, thiamin, riboflavin, iron) which were lost in milling the whole wheat flour added back. Perhaps the students would like to express which type of bread they prefer, why, and if they would suggest making a change, and why.

Activity #3: "The Bread and Cereal Diary"

Ask the students to write down all the grain and cereal products and the amounts that they ate yesterday...or have them keep track at a future date. In class, have the students share the information with each other. If it is not too threatening to the students, have them suggest to each other possible improvements in their intakes of bread and cereals. (This part of the activity could be done privately between the teacher and each student).

Activity #4: "Rank the Cereals"

Ask the students to each bring in an empty cereal box or two. Collect several beforehand yourself, so that a variety of types are represented. From different labels, have the students identify which ingredient is present in highest amount (the first listed) and how many Calories a serving contains (with and without milk). If the nutrition information also contains "Carbohydrate Information", have the students identify how much sugar (sucrose) a serving contains (and how much dietary fiber a serving contains).

Ask the students to rank the cereals from most nutritious to least nutritious. Vicki Lanski's The Taming of the C.A.N.D.Y. Monster contains a listing of sucrose and glucose content of commercially available breakfast cereals from the Journal of Dentistry for Children, Sept.-Oct. 1974, which might make a good handout to accompany this exercise. Suggest that they might want to share this information with those at home.

Activity #5: "Guess Where the Food Belongs"

Preparation:

Using 3" x 5" cards, or other appropriate cards, make a deck of food-country flash cards: the name of a country on one side, the name of a bread or cereal product associated with that country on the other. Some of the students might want to contribute suggestions. For example: Germany--rye bread, Mexico--tortillas, Japan--rice, China--rice or noodles, Scotland--oats, USA--corn bread, USA (South)--grits, Italy--spaghetti. ...Food in History, by Reay Tannahill would be a good reference.

Activity:

Have the students quiz each other to become familiar with the variety of grain and cereal products found throughout the world. An extension of this activity could be a trip to the school or public library to examine cookbooks using a particular grain or cereal product... making a simple recipe as a group.

Activity #6: "Scavenger Hunt"

Duplicate the worksheet (THE PUZZLE PAGE); distribute a copy to each student. Tell the class that they are going on a scavenger hunt at the grocery store. (Beforehand, contact the store manager to ask if it is appropriate to bring your whole class. Explain that you are studying grain and cereal products and would like the students to become familiar with the wide variety of products available. Ask the manager to suggest the least busy time, when such a visit would be least disruptive for the store personnel and most convenient for both your schedules.)

Activity #6 (continued)

After returning, have the students share the information which they found. Perhaps "rewards" or prizes appropriate to the task could be given (doll-sized bread pan, rolling pin, pie plate or some food item, not immediately edible, such as oddly-shaped macaroni, a bag of flour, box of instant cereal). If you are concerned about using any type of food as a reward, use the non-food prizes, instead.

Activity #7: "Your Basic Granola"

Prepare "Basic Granola and Fruit" as a class activity, if facilities are available. The recipe is on a separate sheet of paper. Encourage the students to take the recipe home to share. The granola makes an excellent snack with milk, whenever the students get hungry between meals...and can be eaten dry instead of candy.

.... GIGGLES ....

Q: The old man took a loaf of bread up the crooked mountain path. Why?
A: Because bread is the staff of life.

..........It is a little known fact that while the animals went onto Noah's Ark in pairs, some had multiplied by the end of the 40-day trip. Noah shall go down in history as the first man to have bred his cast upon the waters.

Dit: What's "Life at the Breakfast Table"?
Dot: The newest breakfast serial, dummy!

B - RIGHT IDEAS

THE BREAD AND CEREAL GROUP

(Information Sheet)

Whole-grain or enriched breads and cereals include all products made with whole grains or enriched flour or meal (bread, biscuits, muffins, waffles, pancakes, cooked or ready-to-eat cereals, cornmeal, flour, grits, macaroni, spaghetti, noodles, rice, rolled oats, barley, and bulgur). These foods are important sources of carbohydrates, B vitamins and iron; they also provide protein and are a major source of this nutrient in vegeterian diets. Whole-grain products contribute magnesium, folacin, and fiber, besides.

A serving is 1 slice of bread, 1/2 to 3/4 cup of cooked cereal, cornmeal, grits, macaroni, noodles, rice, or spaghetti, or 1 oz. of ready-to-eat cereal. A hamburger bun, hot dog bun, whole bagel or whole English muffin is 2 servings.

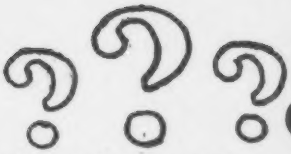
It is a good idea to include some less refined or whole-grain products in your diet daily, because refined products (enriched or not) may be low in some vitamins and trace minerals, which are partially removed from the whole grain in the milling process and are not added back. Enriched grain and cereal products have some nutrients added that were lost in the milling process; these nutrients include iron, niacin, thiamin and riboflavin.

Most breakfast cereals are fortified at nutrient levels higher than those occurring in natural whole grain. It is best to buy unsweetened cereals, so you can control the amount of sugar added, if any at all. Always check the label: some cereals list the sugar (sucrose) content, but the ingredient listed first must be the ingredient there in largest amount.

Include four servings from this group in your diet each day (5 during pregnancy). Breads and cereal foods have gotten a "bum rap". These foods are not "fattening" by themselves; it's the spread on the bread or the sauce on the spaghetti that adds most of the calories.

-- from: Food, USDA

LESSON A-2



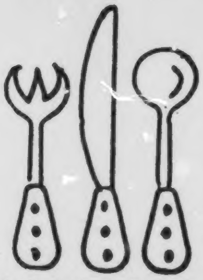
THE PUZZLE PAGE

(Worksheet)

Directions:

Take this sheet with you next time you or a member of your family has to grocery shop. Try to find the products described...all belong to the bread or cereal group. Any number of products are the "right" answer for each question. Please include brand name where possible.

1. A bread which contains NO whole wheat flour . . . . ______
2. A white bread product which contains no enriched flour. . (Note: this would not be included in the B/C Group.) ______
3. Another name for thin spaghetti . . . . ______
4. A frozen bread product . . . . ______
5. A packaged, combination dish product that contains enriched rice . . . . ______
6. A packaged, combination dish product that contains enriched noodles . . . . ______
7. A cereal that is not ready-to-eat . . . . ______
8. A ready-to-eat cereal that does not contain sugar . . . . ______
9. A ready-to-eat cereal that contains sugar as the first ingredient . . . . ______
10. A mix that contains enriched corn meal . . . . ______
11. Two "instant-cooking" cereals . . . . ______
    ______
12. The grain product from which grits comes . . . . ______
13. A canned bread product (this is a hard one!) . . . . . . ______
14. A ready-to-eat cereal that offers a prize in the box . . ______
15. The least expensive brand of enriched white flour . . . . ______
16. An "added" ingredient in "self-rising" flour . . . . . . ______
17. A canned product which contains enriched noodles or spaghetti . . . . ______
18. A frozen product which contains enriched noodles or spaghetti . . . . ______
19. Any cracker, other than saltines, which contains enriched flour . . . . ______
20. An oat cereal, ready-to-eat and shaped like little "O's" ______



RECIPE PAGE

Basic Granola and Fruit

Equipment needed:
- stove and oven
- large bowl
- mixing spoon
- sauce pan
- shallow baking pan or cookie sheet
- plastic bag or glass container
- measuring cup(s)
- knife

Ingredients:
- 10 cups rolled oats
- 1/2 cup honey
- 1/2 cup vegetable oil
- about 1 cup chopped dates or raisins, or combination of both

Instructions: Place the oats in a large bowl. Heat the honey and vegetable oil in a sauce pan until well mixed and fluid. Pour the honey/oil over the oats and stir to mix.

Spread the mixture in an oiled shallow baking pan or cookie sheet. Place into a preheated 250°F. oven. Bake about 40 minutes until lightly browned. Alternatively, bake at 350°F. for 20 minutes, if time is short. Stir every 10 minutes to prevent burning and to promote even browning. Cool completely after removing from oven.

Mix in dried fruit and store in an airtight bag to preserve freshness. Best if stored in refrigerator.

Suggestions: This recipe makes a large batch; you might want to scale down the recipe, such as cutting it in half.

LESSON A-3

MILK CAN BE A MOO...VING EXPERIENCE

(Milk and Cheese Group)

FOCUS

These foods are the main source of calcium in the U. S. diet; they are also rich in protein and certain vitamins (A, B-complex, and sometimes D). There are non-milk foods that supply calcium, too.

OBJECTIVES

The student will be able to:

1. identify this group as a primary source of calcium and a good source of protein, riboflavin and vitamin D (if fortified).
2. list serving sizes for 3 different foods in this group.
3. recognize that a non-pregnant teenager needs at least four servings from this group daily.

TEACHER'S NOTES

Milk and most milk products are calcium-rich foods. They contribute riboflavin, protein, and vitamins A, B_6, and B_{12}, also. This group includes whole, skim, low-fat, evaporated, and non-fat dry milk, buttermilk, yogurt, ice cream, ice milk, cheese, cottage cheese, natural cheeses, and process cheese foods and spreads.

While not members of this food group, dark-green vegetables, such as collards, kale, mustard turnip, and dandelion also supply a fair amount of calcium. (See Lesson #A-1.)

--from: The Hassle-Free Guide to a Better Diet, USDA

REFERENCES

Davis, Carole A., and others. Food. Home and Garden Bulletin No. 228. U. S. Department of Agriculture. Washington, D.C.: U. S. Government Printing Office, 1979.

Katt, Sally, ed. "What's to Eat?", and Other Questions Kids Ask About Food. Yearbook of Agriculture, 1979. Washington, D.C.: U. S. Government Printing Office, 1979.

Nutrition Source Book. Rosemont, Illinois: National Dairy Council, 1978.

INFORMATION HANDOUT

Duplicate and distribute "B-RIGHT IDEAS" to students. Read over the handout with the class or individual student to emphasize particular points and answer questions.

WORKSHEET

Duplicate "THE PUZZLE PAGE" and use as in-class exercise or as a take-home exercise. If sent home, encourage the student to seek the help of others in the family or living group.

SUGGESTED ACTIVITIES

Activity #1: "Many Moo Foods"

Preparation:
Duplicate the "Mini Food Composition Table" (MFCT) in Appendix B, making enough copies so several students can share a copy.

Activity:
Ask the students carefully to go through the MFCT to identify all the "Moo Foods" (buttermilk, varieties of cheese, ice cream, ice milk, varieties of milk, varieties of yogurt).

Have each of the students bring one or two empty containers of "Moo Foods" to class. Alternatively, collect the containers yourself and prepare a display.

Using information on the labels, if available, and from the Mini-Table have the students make a list of the serving sizes of each food, the calories per serving, the mg. of calcium per serving, and the protein per serving. (Refer to the information sheet, B-RIGHT IDEAS, for information on serving sizes. Note that a serving size for cottage cheese is more reasonably 1 cup, but that it would take two cups of cottage cheese to equal the calcium in one 8-ounce glass of milk.)

Ask the students to identify the product highest in protein and/or calcium per serving, the several products lowest in calories per serving, and the several products highest in calories. Since the non-pregnant teenager needs 4 servings each day of these foods (the pregnant teenager needs 5-6 servings each day), have the students suggest various combinations of the products that would meet the requirement, keeping in mind the calories, calcium, and their eating styles.

Activity #2: "But I Can't Drink Milk!"

Refer to Lesson A-1, Activity #4, for an activity about non-milk foods which are fair sources of calcium. This activity is especially appropriate for students of African or Asian background, because many do not or cannot drink milk.

Activity:
Combine the A-1 activity with an exploration of dairy foods other than milk, such as yogurt, cheese, and possibly ice cream or ice milk. Ask the students to suggest combinations of dairy foods other than milk and the greens high in calcium which could meet their calcium requirement. Refer to the Mini Food Composition Table in Lesson A-1 for additional information. The non-pregnant teenager needs about 1200 mg. of calcium each day; the pregnant teenager needs about 1600 mg. of calcium each day.

Activity #3: "Yucks and Yums"

Duplicate the worksheet (THE PUZZLE PAGE) and use as a class exercise. Have the students share their serving ideas and likes and dislikes. Poll the students especially for those products never tasted. Suggest that they try the "unknown" products. Bring samples for the students to taste as a follow-up activity.

Activity #4: "Make Mine Dessert"

Prepare "Yo-Cot Parfait" as an in-class activity. This recipe used either yogurt or cottage cheese as the calcium source. Allow students to try either one or both. Duplicate the recipe and distribute to students; suggest that they share the recipe with those at home. The recipe is found on a separate sheet of paper.

LESSON A-3

B-RIGHT IDEAS

(Information Sheet)

MILK AND CHEESE FOODS

This group includes milk in any form: whole, skim, low-fat, evaporated, buttermilk, and non-fat dry milk; also yogurt, ice cream, ice milk, and cheeses, such as natural, processed, and cottage cheeses. Milk and most milk products are major sources of calcium in the U. S. diet; they also supply riboflavin, protein, and some vitamins (A, B_6, and B_{12}). When the products are "fortified", they also provide vitamin D. The main difference between whole milk products and fortified skim or low-fat milk products is that the whole milk products contain more calories because of their fat content.

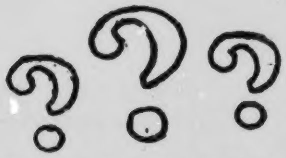
An 8-ounce cup of milk is a serving. To equal the calcium in a one cup serving of milk, you would have to eat approximately 1 cup of plain yogurt, 1 1/3 ounce of natural or process cheese, 2 ounces of process cheese food, 1 1/2 cup of ice cream or ice milk, or 2 cups of cottage cheese.

The teenager who is not pregnant or nursing needs 4 servings each day (the pregnant teenager needs 5-6 servings, as does the nursing teenager). Milk can be used in cooked foods, such as in creamed soups, sauces, and puddings. This milk can count toward filling the daily quota in this group. Remember that the serving "sizes" listed above all have nearly the same amount of calcium; the amounts of calories and protein do vary.

Non-milk sources of calcium do exist. Dark-green vegetables, such as collards, kale, mustard, turnip, and dandelion greens also supply a fair amount of calcium, as does canned fish, such as sardines or salmon, eaten with the bones.

-- revised from: Food, USDA

LESSON A-3



THE PUZZLE PAGE

(Worksheet)

Below is a list of some milk products and various kinds of milk. Try to think of some ways each may be used in your diet. Write them down in the column titled "Serving Ideas". Then, in the next column, "My Vote", make a:

☺ "smiley face" if you have tasted the product and like it
☹ "sad face" if you have tasted the product and do not like it
😐 "empty face" if you have never tasted the product.

Total up the "faces" in the column. You might want to try some of the "empty face" products and enter a new vote.

Product	Serving Ideas	My Vote
1. Whole milk		
2. Skim milk		
3. Low-fat milk		
4. Evaporated milk		
5. Buttermilk		
6. Non-fat dry milk with water added		
7. Yogurt, plain		
8. Yogurt, fruit-flavored		
9. Ice cream		
10. Ice milk		
11. Natural cheeses: such as Cheddar, Swiss, Brick		
12. Cottage cheese		
13. Ricotta cheese		
14. Processed cheese: such as American slices		
15. Processed cheese food		
	Vote Totals ☺ =	☹ = 😐 =

RECIPE PAGE

Yo-Cot Parfait

Equipment needed: a variety of glasses or dishes of about 10 ounce capacity (clear plastic "old fashioned" glasses are ideal)
large spoons
spoons for eating parfait
knife
chopping board
can opener
measuring cup

Ingredients: for each parfait:
1/2 large or 1 small banana, sliced in rounds
1/2 cup cottage cheese or 1/2 cup plain yogurt
1/4 cup crushed pineapple, canned in juice
1 Tbsp. raisins or chopped peanuts

Instructions: Layer the sliced banana with the yogurt or cottage cheese in a glass or dish. Top with the crushed pineapple and sprinkle with the raisins or nuts. Eat right away.

Suggestions: Use your imagination in fruit combinations. Try a variety of fresh, canned and frozen fruit. Those canned or frozen without heavy syrups are lower in calories.

.... GIGGLES ....

Smart: What kind of cows do people in Alaska raise?
Smarter: Eski-moos.

Huey: When do cows wear bells?
Dewey: When their horns don't work.

Q: How do you make an hippopotamus float?
A: With some root beer, two scoops of vanilla ice cream, and one hippopotamus.

LESSON A-4

PRO-TEEN FOODS

(The Meat, Poultry, Fish, and Bean Group)

FOCUS

These foods are excellent sources of protein, B vitamins, and certain minerals (iron, phosphorus, zinc). This group includes both animal and vegetable products.

OBJECTIVES

The student will be able to:

1. identify this group as a good source of protein, minerals (iron, phosphorus, zinc), and vitamins (B-complex vitamins).
2. list four amounts of particular foods from this group (two animal and two vegetable) which constitute a serving and state a special nutrient for which each is important.
3. recognize that at least 2 servings from this group are recommended for the non-pregnant teenager.
4. recognize that meat and meat products (animal products) are the only source of vitamin B_{12}.

TEACHER'S NOTES

Meat, poultry, fish, and beans are valued for protein, phosphorus, iron, zinc, vitamin B_6, and other vitamins and minerals. Included in this group are beef, veal, lamb, pork, poultry, fish, shellfish (shrimp, oysters, crabs, etc.), dry beans, dry peas, soybeans, lentils, eggs, seeds, nuts, peanuts and peanut butter.

It is a good idea to vary choices from this group. Each food has a distinct nutritional advantage. Red meats are good sources of zinc. Liver and egg yolks are valuable sources of vitamin A. Dry beans, peas, soybeans, and nuts are worthwhile sources of magnesium. All foods of animal origin contain vitamin B_{12}; foods of vegetable origin do not.

--from: The Hassle-Free Guide to a Better Diet, USDA.

REFERENCES

Davis, Carole A., and others. Food. Home and Garden Bulletin No. 228. U. S. Department of Agriculture, Washington, D.C.: U. S. Government Printing Office, 1979.

Katt, Sally, ed. "What's to Eat?", and Other Questions Kids Ask About Food. Yearbook of Agriculture, 1979. Washington, D.C.: U. S. Government Printing Office, 1979.

Nutrition Source Book. Rosemont, Illinois: National Dairy Council, 1978.

INFORMATION HANDOUT

Duplicate and distribute "B-RIGHT IDEAS" to students. Read over the handout with the class or individual student to emphasize particular points and answer questions.

WORKSHEET

Duplicate "THE PUZZLE PAGE" and use as in-class exercise or as a take-home exercise. If sent home, encourage the students to seek the help of others in the family or living group.

SUGGESTED ACTIVITIES

Activity #1: "Animal or Vegetable?"

Preparation:

Collect pictures of protein foods or have the students collect the pictures. Paste the pictures on pieces of paper or cards. Identify each food with a label. On the back of each card or paper write the type of protein (animal or vegetable), what particular nutritional advantages the food offers, and the serving size (refer to the information sheet with this lesson or to one of the references in the list). For example:

Chicken: Animal protein
Low in Calories
Vitamin B_{12}
Serving size: 2-3 ounces, cooked, without bone

Peanut butter: Vegetable protein
Magnesium
Serving size: 4 ounces or 1/4 cup

Activity:

Have the students help in the preparation by going through magazines for the pictures. After the cards are prepared, have the students quiz each other with the flash cards...it is not necessary that the student be able to repeat everything on each card, but that they develop some understanding of the variety of foods and nutrients that this group contains.

Activity #1 (continued)

As an extension of this exercise, have the students suggest ways to use each of the foods in their particular diets. Emphasize that non-pregnant teenagers need 2 servings from this group each day (the pregnant teenager needs 3 or more servings each day).

Activity #2: "A Protein Log"

Ask the students to write down all the protein foods that they ate yesterday...or have them keep a log for a day or two. In class, have the students share the information with each other. If it is not too threatening to the students, have them suggest to each other possible improvements in their intakes of protein foods. (This part of the activity could be done privately between the teacher and each student.)

Activity #3: "Nutty and Seedy Characters"

Preparation:

Collect samples of nuts and seeds and/or products made from nuts and seeds. The students may want to help by bringing samples themselves. Stores that carry "ethnic" foods or "natural" food stores or co-ops might have some of the more unusual products; often these products are available in regular supermarkets. Prepare (or have the students prepare) a display of the products and nuts and seeds, with labels.

Activity:

Poll the students to see which ones they have tasted, whether they liked them, and if there is any one that they would like to sample. If interest is great enough, suggest that one or two of the students look through some "vegetarian" cookbooks in the public or school library (see bibliography in Appendix B or reference list in this lesson for suggestions), for a simple recipe for the class to make to sample.

It is important to emphasize that although this offers variety to the diet, vegetarian diets are not necessarily recommended for pregnant teenagers.

Activity #4: "Find the Protein Foods"

Duplicate the worksheet (THE PUZZLE PAGE) in this lesson or make a transparency of the worksheet. Use it as an in-class exercise. If competition does not disturb the students, make a contest out of it with some "reward" for the winner. Choose some protein food item not immediately edible (such as a bag of dry peas or beans or beans with a recipe attached) or, if food rewards are not a comfortable choice, make a "prize" ribbon with a picture of a protein food and a piece of colored ribbon.

Activity #5: "Celery and Friends"

Prepare "Liver in Disguise" or "Stuffed Celery Logs" in class, if facilities are available. Otherwise prepare them ahead of time and refrigerate (or keep on ice until serving time). The recipes are on a separate piece of paper. Each makes use of a protein food: one animal and one vegetable. Duplicate the recipe and suggest that the students share it with those at home; ask the students to report on the reactions of others to the members of the class, if they wish.

Since some people have an aversion to liver, perhaps this could be presented as the "mystery recipe", for the students to identify the ingredient...they might find that they like liver in this form.

LESSON A-4

B - RIGHT IDEAS

(Information Sheet)

MEAT, POULTRY, FISH, AND BEAN GROUP

This group includes beef, veal, lamb, pork, poultry, fish, shellfish (shrimp, oysters, crabs), organ meats (liver, kidneys), dry beans or peas, soybeans, lentils, eggs, seeds, nuts, peanuts, and peanut butter. These foods are valued for the protein, phsophorus, B vitamins and other minerals (iron and zinc) that they provide. Only foods of animal origin contain vitamin B_{12} naturally. Cholesterol, like vitamin B_{12}, occurs naturally only in foods of animal origin. All meats (and dairy products) supply cholesterol. The highest concentration is found in organ meats and in egg yolks. Fish and shellfish (except for shrimp) are relatively low in cholesterol.

One serving is 2-3 ounces of lean, cooked meat, poultry, fish without bone, two eggs, 1-1 1/2 cup cooked dry beans, dry peas, soybeans or lentils, 4 tablespoons of peanut butter, or 1/2-1 cup of nuts, sesame seeds, or sunflower seeds. The non-pregnant teenager needs 2 servings from this group each day; the pregnant teen should increase her servings of protein foods to 3 or more each day.

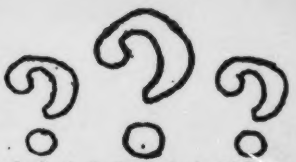
It's a good idea to vary your choices among these foods as each has a distinct nutritional advantage. For example, red meats and oysters are good sources of zinc. Liver and egg yolks are valuable sources of vitamin A. Dry beans, dry peas, soybeans, and nuts are worthwhile sources of magnesium. The flesh of fish and poultry is relatively low in calories and saturated fat. Seeds (such as sunflower and sesame seeds) contribute polyunsaturated fatty acids which are essential in a balanced diet.

-- revised from: Food, USDA.

.... GIGGLES ....

Knock, knock!
Who's there?
Tuna.
Tuna, who?
Tuna TV, the picture's fuzzy.

LESSON A-4



THE PUZZLE PAGE

(Worksheet)

N	B	X	N	Z	L	M	S	D	L	O	P	V
W	X	S	U	N	F	L	O	W	E	R	H	P
C	W	M	E	G	G	O	F	P	H	F	O	H
T	R	B	E	A	N	S	Y	C	W	S	S	X
A	O	A	M	A	V	R	C	S	O	Y	P	Y
J	B	D	B	E	T	U	A	E	T	R	H	G
Z	V	E	A	L	P	P	L	S	O	E	O	R
A	E	H	U	C	G	E	O	A	A	D	R	Y
K	L	O	I	Q	F	A	R	M	E	D	U	S
Y	P	O	R	K	E	N	I	E	Z	Q	S	R
Q	M	Y	O	L	K	U	E	F	A	Z	S	W
J	L	T	N	M	U	T	L	I	V	E	R	A
U	C	H	O	L	E	S	T	E	R	O	L	T
C	V	X	U	Y	I	T	B	N	O	L	T	M

In the above jumble of letters are 10 words that are important in protein foods. Fill in the following blanks to discover which words are hidden in the puzzle...then look for the words.

1. A good non-meat source of protein. Soy ______________.
2. Red ______________ is a good source of zinc.
3. Very young and tender beef is called ______________.
4. ______________ includes chicken, turkey, and duck.
5. "Oink! Oink! food. ______________.
6. ______________ sauce is made from ______________ (same word) beans.
7. ______________ beans or peas are good sources of magnesium.
8. A seafood low in cholesterol, sometimes eaten raw. ______________.
9. A mineral found in protein foods. ______________ (starts with "P").
10. Another mineral found in protein foods. ______________ (what you don't have to do to permanent press clothes).
11. A substance found only in animal foods. ______________.
12. "Open, ______________." (a type of seed)
13. ______________ seeds contain polyunsaturated fatty acids.
14. What one chicken said to another: "That's no ______________." (a good source of cholesterol)
15. ______________ is an organ meat that is made into sausage.
16. Something laid by chickens, platypuses, and bad comedians. ______________.
17. A sign in the Zodiac and a shellfish. ______________.
18. The flesh of fish and poultry is relatively low-______________.
19. A Bonus! The main ingredient in peanut butter. ______________.

PUZZLE ANSWERS

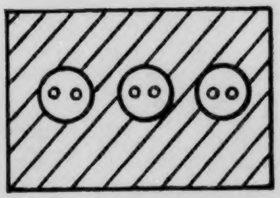
1. beans
2. meat
3. veal
4. poultry
5. pork
6. soy
7. dry
8. oysters
9. phosphorus
10. iron
11. cholesterol
12. sesame
13. sunflower
14. yolk
15. liver
16. egg
17. crab
18. calorie

BONUS: Peanuts

..........GIGGLES..........

If it takes twenty minutes to hard-boil one egg, how long will it take to hard-boil four eggs?

What is it???



Answers: 20 minutes; "Three Little Pigs on a Foggy Day"

RECIPE PAGE

Liver in Disguise

Equipment needed:
- knife
- medium sized mixing bowl
- sink and scrub brush
- fork and mixing spoon
- paper towels
- chopping board

Ingredients:
- chunk liver sausage, about 1-2 ounces per person
- sweet pickle relish
- plain yogurt or mayonnaise
- head of celery
- sesame seeds or sunflower seeds (optional)

Instructions: Remove the casing from the sausage. Cut the sausage into chunks, then place in a bowl and mash with a fork. Add enough mayonnaise or yogurt to moisten to a smooth thick paste. Add a teaspoon or two of pickle relish. Mix well.

Scrub the celery stalks and "unstring" them. Wipe dry. Stuff each stalk with the liver sausage mixture. Cut into serving-sized pieces. Sprinkle with seeds, if desired.

Stuffed Celery Logs

Equipment needed: same as in recipe above

Ingredients:
- peanut butter, chunky or smooth
- head of celery
- sesame seeds or sunflower seeds (optional)

Instructions: Scrub the celery stalks and "unstring" them. Wipe dry. Stuff each stalk with the peanut butter. Put two stuffed stalks together, peanut butter sides facing. Cut into bite-sized pieces. Dip the ends in the seeds, if desired.

LESSON A-5

LESS SIGNIFICANT OTHERS

(The Fifth Food Group)

FOCUS

Most foods in this group are high in calories and provide relatively low levels of vitamins, minerals and proteins. Alcoholic beverages are included in this group. Alcohol may pose significant health hazards for the non-pregnant teenager, as well as for the pregnant teenager and her developing baby.

OBJECTIVES

The student will be able to:

1. identify this group as a source of carbohydrate and fat (energy) only and not a significant source of vitamins, minerals, or protein.
2. recognize that amounts of foods from this group should be determined by individual energy needs.
3. include alcohol in this group and state that it offers little nutrition other than calories (energy) and may pose significant health hazards for the teenager.

TEACHER'S NOTES

These foods provide few nutrients: most foods in this group provide relatively low levels of vitamins, minerals, and protein compared to calories. Vegetable oils generally do supply vitamin E and essential fatty acids. Butter and fortified margarine contribute vitamin A. Other foods in this group are mayonnaise and salad dressings; sugar, honey, syrups, candy, jams, jellies, sweet toppings, sugar-sweetened beverages, and other sweets; alcoholic beverages (such as wine, beer, liquor); and unenriched refined flour and baking products.

--from: The Hassle-Free Guide to a Better Diet, USDA

REFERENCES

Davis, Carole A., and others. Food. Home and Garden Bulletin No. 228. U. S. Department of Agriculture. Washington, D.C.: U. S. Government Printing Office, 1979.

The Drinking Question. National Institute on Alcoholic Abuse and Alcoholism, U. S. Department of Health and Human Services. Washington, D.C.: Government Printing Office, 1975. (pamphlet)

Katt, Sally, ed. "What's to Eat?", and Other Questions Kids Ask About Food. Yearbook of Agriculture, 1979. Washington, D.C.: U. S. Government Printing Office, 1979.

Nutrition Source Book. Rosemont, Illinois: National Dairy Council, 1978.

INFORMATION HANDOUT

Duplicate and distribute "B-RIGHT IDEAS" to students. Read over the handout with the class or individual student to emphasize particular points and answer questions.

WORKSHEET

Duplicate "THE PUZZLE PAGE" and use as in-class exercise or as a take-home exercise. If sent home, encourage the student to seek the help of others in the family or living group.

SUGGESTED ACTIVITIES

Activity #1: "Learn from Labels"

Preparation:

Collect front and back labels, complete wrappers, or boxes or containers from "sugar" products (candies, jams, jellies, flavored gelatin, toppings, syrups) and unenriched grain products (bagels, buns, some macaroni-type products... any product whose label says "unenriched" or which does not specifically state "unenriched" if whole grain flour is missing). Mount or staple them on sheets of paper, so that back and front do not get separated and for easy storage. The students may wish to help in the collection and mounting.

If desired, duplicate the USDA articles "Consumer's Guide to Food Labeling" in Appendix B for the students' reference.

Activity:

Present the labels to the students; ask them each to look at every label to identify the similarities, which include:

1. carbohydrate is the major energy source (starch or sugar)
2. few/no minerals, vitamins, protein
3. relatively large number of calories per serving (especially for the sugar products)
4. long expected shelf life (if "pull-date" information is available)

(Note: If only the ingredients are listed, less information is available; the students may only be able to deduce that sugar or starch is the main ingredient. Thus, it would be more educational to have as many "nutrition information" labels included, as possible.)

Discuss positive and negative aspects of these foods. Some suggestions include:

Positive:
- Sugars make foods taste good
- Caramel (sugar) adds texture and color to bakery products
- Sugars help thicken, firm, or preserve foods
- Unenriched products may cost less

Negative:
- Sugars offer little nutritionally except calories
- Sugars and unenriched grain products replace other foods which do contain minerals, vitamins, and protein
- Sugars add calories without bulk or fiber
- Sugar's extra calories can add weight
- Sugar is major contributing factor of dental caries (cavities)

Ask students to suggest ways to substitute other more nutritious foods in their diet. Suggestions include:

Activity #1 (continued)

1. Always check the label for "enriched" grain products
2. Use fresh fruit of "low sugar" preserves
3. When eating out, ask if the breads and other bakery products are "enriched"
4. Eat fresh or roasted nuts instead of candy
5. Make sundaes with fresh fruit, instead of prepared toppings
6. Use more whole grain products, which don't need enrichment
7. At bakery, ask if products are "enriched"

Activity #2: "Find the Hidden Sugar"

Preparation:
Collect a variety of labels (some from Activity #1 would be useful here) of products which contain simple carbohydrate (sugar, sucrose, fructose, glucose, dextrose, caramel coloring or flavoring, corn syrup, natural sweeteners, invert sugar, corn sweetener, honey, molasses). Include such products as peanut butter, ketchup, pickles, soups, dry cereals, crackers, as well as the more usual "sugar" products. Mount as in Activity #1, if desired. The student might like to help in the collecting and mounting activities.

Activity:

1. Write "SUGAR" on the board. Around it write all the different words that describe different forms of simple carbohydrates. Pass out the labels. Discuss how many foods contain "hidden sugar", often to "enhance" the flavor of food, and sell more product.

Activity #2 (continued)

2. Ask the students to suggest ways to cut down on consumption of simple carbohydrates. Suggestions include:
   a. substitute fruit juice for drinks/ades/punches
   b. cut down on consumption of candy, pies, cakes, pastries, and cookies
   c. use "canned-in-juice" fruits, instead of "canned-in-syrup" fruits
   d. use unsweetened cereals
   e. decrease sugar in "from-scratch" recipes
3. As a follow-up exercise, suggest that the students conduct a "pantry raid" at home, with the help of the other people there, to track down other products with "hidden sugar". Have them share with the class what they found.

Activity #3: "What's to Drink"

Preparation:
Duplicate the chart included in this lesson for distribution to the students.

Collect containers (or pictures) of orange juice, whole milk, wine, beer, or soft drink, and hard liquor (vodka, gin, whisky, etc.). Prepare labels for each using the information from the chart, if desired.

Activity:
Ask the students to examine the chart and/or labels. Then begin a discussion about the relative nutritional merits of the various "drinks". Points to emphasize include:

1. orange juice and milk have some quantity of each nutrient
2. soft drink offers little but calories

Activity #3 (continued)

3. as the alcohol content increases, calories increase and nutrient content decreases
4. alcohol has definite negative physical effects (drunkness, physical damage) which the non-alcoholic drinks do not have

Have the class calculate the calorie content of equal volumes of the three different alcoholic drinks:

12 ounces of beer = 151 Calories
12 ounces of wine = 298 Calories
12 ounces of hard liquor = 520 Calories

Activity #4:

Invite a speaker from Alcoholics Anonymous (local chapter) or Prevention and Intervention Center for Alcohol and Drug Abuse (Madison, Wisconsin) to discuss the problem of teenage drinking and answer questions from the students. Suggest that the speaker supply any appropriate handouts for the students to add to their notebook/folders. It would be useful for the students to be exposed to non-nutritional aspects of alcohol as well as the nutritional aspects.

Activity #5:

Prepare "Creamy Tomato Sipper" or "Frosted Banana Drink". Recipes and directions are on a separate page. Duplicate recipes for the students to take home or for saving in their notebooks/folders. These recipes are examples of nutritious, non-alcoholic drinks.

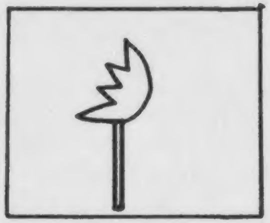
Activity #6:

Duplicate the worksheet (THE PUZZLE PAGE) and use as an in-class exercise. Have each student complete the page and then discuss possible ways to decrease her intake of those that appear high.

..........GIGGLES..........

Q: What did one french fry say to the other french fry?
A: "Oil's well that ends well."

What is it???



Answer: A used lollipop.

HANDOUT FOR ACTIVITY #3

Nutrition Information for Drinks

	Food energy: Calories	Protein: grams	Fat: grams	Carbohydrate: grams	Calcium: milligrams	Iron: milligrams	Potassium: milligrams	Vitamin A: I.U.	Vitamin C: milligrams	Niacin: milligrams
Soft drink 12 ounce can or glass	113	---	---	30	---	---	---	---	---	---
Orange juice 8 ounce glass	120	2.5	0.7	26	27	0.7	471	500	122	1.0
Whole milk 8 ounce glass	160	8.5	8.5	12	288	0.1	351	350	2	0.2
Beer 12 ounce glass or can 4.5% alcohol by volume	151	1.1	0	14	18	trace	90	---	---	2.2
Wine 3 1/2 ounce glass 12% alcohol by volume	87	0.1	---	4	9	0.4	94	---	---	0.1
Hard liquor (gin, whiskey, vodka, rum) 1 1/2 ounce 40% alcohol by volume 80 proof	65	---	---	trace	---	---	1	---	---	---

*Source: U. S. Department of Agriculture, Nutritive Value of American Foods in Common Units, Agriculture Handbook No. 456, 1975.

LESSON A-5

B - RIGHT IDEAS

(Information Sheet)

THE FIFTH FOOD GROUP

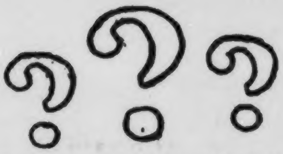
"The Less-Significant Others" group includes foods like butter, margarine, mayonnaise, and other salad dressings, and other fats and oils; candy, sugar, jams, jellies, syrups, sweet toppings, and other sweets; soft drinks and other highly sugared beverages; and alcoholic beverages such as wine, beer, and liquor. Also included are refined, but unenriched, breads, pastries, and flour products. Some of these foods are used as ingredients in prepared foods or are added to other foods at the table. Others are just "extras". No serving sizes are defined because a basic number of servings is not suggested for this group, and amounts should be determined by individual energy needs.

With some exceptions, such as vegetable oils, these products provide mainly calories. Vegetable oils generally supply vitamin E and essential fatty acids. (Refer to Lesson 12 for other sources of vitamin E.) Fats and oils have more than twice the calories, ounce for ounce, as protein, starches, or sugars, but keep hunger pangs away longer.

Unenriched, refined bakery products are included here because, like other foods and beverages in this group, they usually provide relatively low levels of vitamins, minerals, and protein compared with calories.

Pure alcohol has almost twice the calories per ounce as protein, starches, or sugars. However, few alcoholic beverages are 100 percent alcohol. Generally, the higher the alcohol content, the higher the calories, ounce for ounce. Besides being "empty calories", alcohol interferes with the absorption of several vitamins and minerals. Alcohol retains the dubious honor of being the most used and abused drug in our society; its continued use can lead to psychological and physiological (mind and body) addiction.

--from: Food, USDA.



PUZZLE PAGE

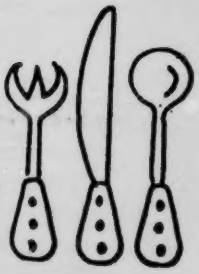
(Worksheet)

Directions: Below are many foods, all of which belong in the "Fifth Food Group". You will need two different colored pens or pencils. With one color, underline all of those items that contain alcohol, put a box around all of those items which are $\boxed{\text{sugar products}}$, and put a circle around those items which are mainly fat or oil.

Then with the second color pen or pencil, put a "+" by all those items that you eat or drink a lot (at least once a day) and a "O" by those items that you eat only sparingly. If you don't eat or drink the item, put a "-" beside it.

GIN
MARSHMALLOWS
WHISKEY
CANDY BAR
LARD
JAM
CORN SYRUP
SOFT DRINKS
VODKA
CHOCOLATE
ICE CREAM SYRUP
HARD CANDY
MAYONNAISE
MARGARINE
WHITE SUGAR
MAPLE SYRUP
SHERRY
DINNER WINE
RUM
BROWN SUGAR
CARAMELS
HONEY
PRESERVES
BUTTER
SCOTCH
BEER
BRANDY
MOLASSES
VEGETABLE OIL

RECIPE PAGE



Creamy Tomato Sipper

Equipment needed:
- large jar with a tight-fitting cap or a blender
- spoon
- knife (optional)
- measuring cup and spoons
- paper cups for serving

Ingredients:
- 4 cups tomato juice, chilled
- 1 cup plain (unflavored) yogurt
- 1 teaspoon lemon juice
- 2-3 drops Tabasco (optional)
- pepper to taste

Instructions: Combine the ingredients in a large jar with a tight-fitting cap or place in a blender. Shake well or blend until well mixed. Chill, if desired, or serve immediately.

Suggestions: This recipe makes 4-6 large servings (about 9 ounces each). Each serving contains 80-50 Calories per serving. The servings could be "stretched" in the classroom to serve about twice as many as the recipe suggests.

Frosted Banana Drink

Equipment needed:
- blender
- knife
- spoon
- paper cups for serving
- measuring cup

Ingredients:
- 2 ripe bananas
- 1 cup milk
- 1 cup plain yogurt (unflavored)
- 1/2 cup vanilla ice cream
- dash nutmeg

Instructions: Peel the bananas and cut into chunks. Place all ingredients in the blender. Blend until smooth and frothy. Serve immediately, or chill and serve later.

Suggestions: Substitute vanilla ice milk or frozen yogurt for the ice cream to lower the fat content of the drink.

As above, this recipe makes 4-6 large servings (about 9 ounces each). Each serving contains about 210-150 Calories. This recipe could be "stretched" in the classroom to serve about twice as many as the recipe suggests.

APPENDIX B

A Consumer's Guide To Food Labels

by Margaret Morrison

Food labels provide a great deal of information that can help consumers find out more about what they're getting in the products they buy. Some of this information is required by FDA to be shown on the label; some is included on the label at the option of the manufacturer or processor. Some of the information on food labels may be in the form of symbols or codes or dates.

Here's a rundown of the information most often found on food labels along with a brief explanation of what it means.

BASIC INFORMATION

Certain information must be on all food labels:

- The name of the product.
- The net contents or net weight. The net weight on canned food includes the liquid in which the product is packed, such as water in canned vegetables and syrup in canned fruit.
- The name and place of business of the manufacturer, packer, or distributor.

List of Ingredients

On most foods, the ingredients must be listed on the label. The ingredient present in the largest amount, by weight, must be listed first, followed in descending order of weight by the other ingredients. Any additives used in the product must be listed, but colors and flavors do not have to be listed by name. The list of ingredients may simply say "artificial color" or "artificial flavor" or "natural flavor." If the flavors are artificial, this fact must be stated. Butter, cheese, and ice cream, however, are not required to state the presence of artificial color.

The only foods not required to list all ingredients are so-called standardized foods. FDA has set "standards of identity" for some foods. These standards require that all foods called by a particular name (such as catsup or mayonnaise) contain certain mandatory ingredients. Under the law, the mandatory ingredients in standardized foods need not be listed on the label. Manufacturers may add optional ingredients, however, and FDA is revising the food standards regulations to require that optional ingredients in standardized foods be listed on the product label.

NUTRITION INFORMATION

Under FDA regulations, any food to which a nutrient has been added, or any food for which a nutritional claim is made, must have the nutritional content listed on the label. In addition, many manufacturers put nutrition information on products when not required to do so.

Nutrition labels tell you how many calories and how much protein, carbohydrate, and fat are in a serving of the product. They also tell the percentage of the U.S. Recommended Daily Allowances (U.S. RDA's) of protein and seven important vitamins and minerals that each serving of the product contains. Nutrition information can help you shop for more nutritious food and plan more nutritionally balanced meals for you and your family.

How to Read Nutrition Labels

Nutrition information is given on a per serving basis. The label tells the size of a serving (for example: one cup, two ounces, 1 tablespoon), the number of servings in the container, the number of calories per serving, and the amounts in grams of protein, carbohydrate, and fat per serving.

Protein is listed twice on the label: in grams and as a percentage of the U.S. Recommended Daily Allowance.

Seven vitamins and minerals must be shown, in a specific order. The listing of 12 other vitamins and minerals, and of cholesterol, fatty acid, and sodium content is optional.

What U.S. RDA Means

The U.S. Recommended Daily Allowances (U.S. RDA's) are the approximate amounts of protein, vitamins, and minerals that an adult should eat every day to keep healthy. Nutrition labels list the U.S. RDA by percentage. For example, the label may state that one serving of the food contains 35 percent of the Recommended Daily Allowance of vitamin A and 25 percent of the Recommended Daily Allowance of iron. The total amount of food an individual eats in a day should supply the U.S. Recommended Daily Allowance of all essential nutrients.

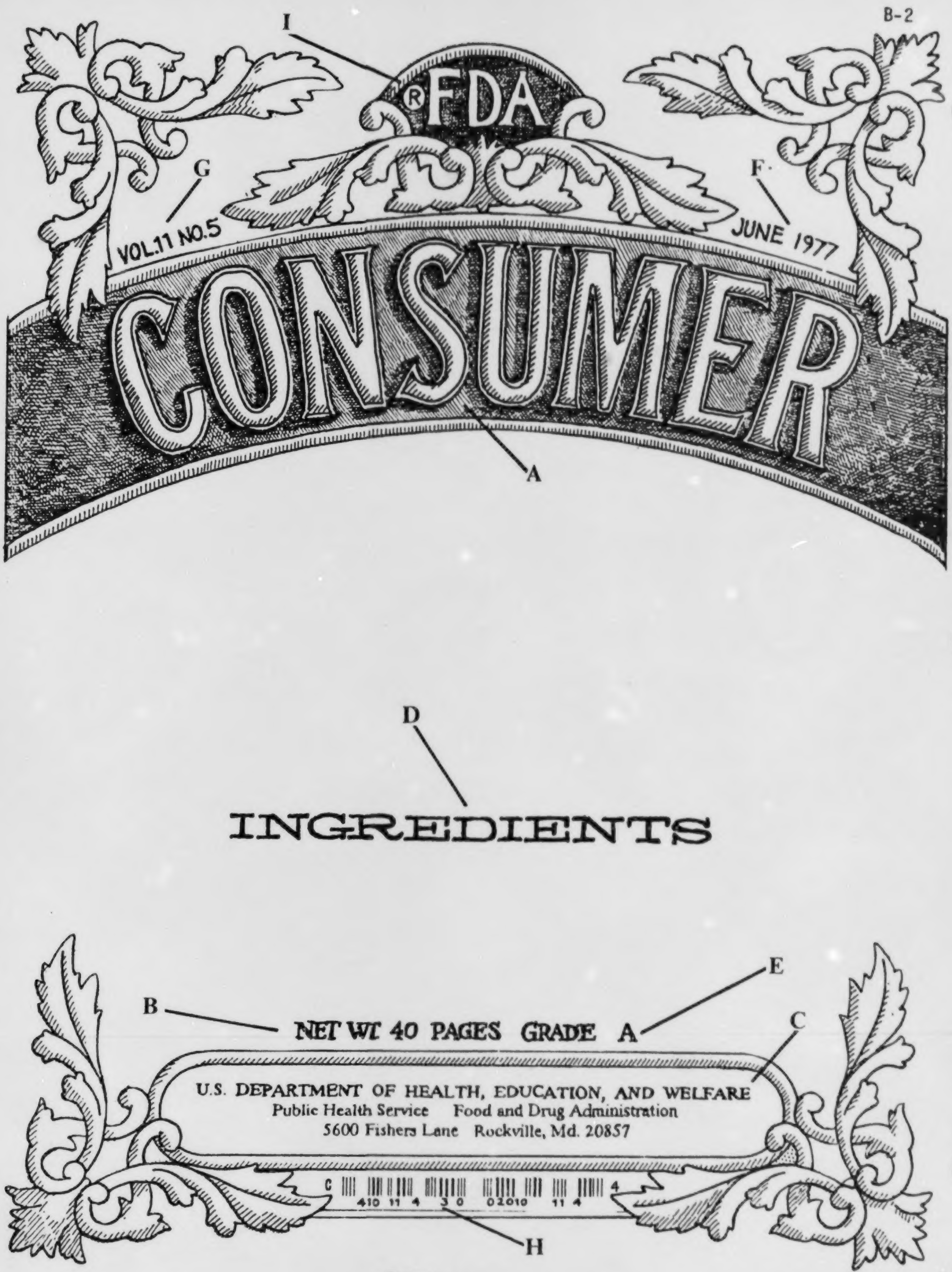
A Key to Metric Units

Nutrition labels show amounts in grams rather than ounces, because grams are a smaller unit of measurement and many food components are present in very small amounts. Here is a guide to help you read nutrition labels:

1 pound (lb.) = 454 grams (g)
1 ounce (oz.) = 28 grams (g)
1 gram (g) = 1,000 milligrams (mg)
1 milligram (mg) = 1,000 micrograms (mcg)

Nutrition Quality

Many foods today are manufactured into products that are different from traditional foods. Some classes of these



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A. *The name of the product must be on all food labels.*

B. *The net contents or net weight must be on all food labels.*

C. *The name and place of business of the manufacturer, packer or distributor must be on all food labels.*

D. *On most foods, the ingredients must be listed on the label.*

E. *Some food products carry a grade on the label.*

F. *To help consumers obtain fresh and wholesome food, many manufacturers open date their product.*

G. *Many companies use code dating on products that have a long "shelf life".*

H. *Many food labels now include a small block of parallel lines of various widths with accompanying numbers for computerized check-outs and inventories.*

The symbol "®" on a label signifies that the trademark used on the label is registered with the U.S. Patent Office.

foods include frozen dinners; breakfast cereals; meal replacements; noncarbonated breakfast beverages fortified with vitamin C; and main dishes such as macaroni and cheese, pizzas, stews, and casseroles.

FDA is establishing voluntary nutritional guidelines for such foods, so consumers can be assured of getting a proper level and range of nutrients when using them. A product that complies with an FDA nutritional quality guideline may include on its label a statement that it meets the U.S. nutritional quality guideline for that particular class of food.

WHAT "IMITATION" MEANS

Some foods are labeled as "imitations" of other foods. Under an FDA regulation, the word "imitation" must be used on the label when the product is not as nutritious as the product which it resembles and for which it is a substitute. If a product is similar to an existing one, and is just as nutritious, a new name can be given to it rather than calling it "imitation." For example, eggless products which are nutritionally equivalent to eggs have been given names such as Eggbeaters and Scramblers.

COMMON OR USUAL NAME

Some foods may look from the label as though they are one thing and actually be another. To prevent deception of consumers, FDA has ruled that such foods must have a "common or usual" name which gives the consumer accurate information about what is in the package or container.

For example, a beverage that looks like orange juice but actually contains very little orange juice must use a name such as "diluted orange juice drink." The product also may be required to state on the label the percentage of the characterizing ingredient it contains. In this case, the common or usual name might be "diluted orange juice beverage, contains 10 percent orange juice."

A noncarbonated beverage that appears to contain a fruit or vegetable juice but does not contain any juice must state on the label that it contains no fruit or vegetable juice.

Another special labeling requirement concerns packaged foods in which the main ingredient or component of a recipe is not included, as in the case of some "main dishes" or "dinners." On such foods, the common or usual name consists of the following:

- The common name of each ingredient in descending order by weight—for example, "noodles and tomato sauce."
- Identification of the food to be prepared from the package—for example, "for preparation of chicken casserole."
- A statement of ingredients that must be added to complete the recipe—for example, "you must add chicken to complete the recipe."

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FDA CONSUMER

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AND HUMAN SERVICES
Public Health Service
Food and Drug Administration
5600 Fishers Lane
Rockville, Md. 20857

GRADES

Some food products carry a grade on the label, such as "U.S. Grade A." Grades are set by the U.S. Department of Agriculture, based on the quality levels inherent in a product—its taste, texture, and appearance. U.S. Department of Agriculture grades are not based on nutritional content.

Milk and milk products in most States carry a "Grade A" label. This grade is based on FDA recommended sanitary standards for the production and processing of milk and milk products, which are regulated by the States. The grade is not based on nutritional values. However, FDA has established standards for milk which require certain levels of vitamins A and D when these vitamins are added to milk.

OPEN DATING

To help consumers obtain food that is fresh and wholesome, many manufacturers date their product. Open dating, as this practice often is called, is not regulated by FDA, but the following information may be helpful to you.

Four kinds of open dating are commonly used. To benefit from open dating, the consumer needs to know what kind of dating is used on the individual product and what it means.

Pack Date—This is the day the food was manufactured or processed or packaged. In other words, it tells how old the food is when you buy it. The importance of this information to consumers depends on how quickly the particular food normally spoils. Most canned and packaged foods have a long shelf life when stored under dry, cool conditions.

Pull or Sell Date—This is the last date the product should be sold, assuming it has been stored and handled properly. The pull date allows for some storage time in the home refrigerator. Cold cuts, ice cream, milk, and refrigerated fresh dough products are examples of foods with pull dates.

Expiration Date—This is the last date the food should be eaten or used. Baby formula and yeast are examples of products that may carry expiration dates.

Freshness Date—This is similar to the expiration date but may allow for normal home storage. Some bakery products that have a freshness date are sold at a reduced price for a short time after the expiration date.

CODE DATING

Many companies use code dating on products that have a long "shelf life". This is usually for the company's information, rather than for the consumer's benefit. The code gives the manufacturer and the store precise information about where and when the product was packaged, so if a recall should be required for any reason the product can be identified quickly and withdrawn from the market.

UNIVERSAL PRODUCT CODE

Many food labels now include a small block of parallel lines of various widths, with accompanying numbers. This is the Universal Product Code (UPC). The code on a label is unique to that product. Some stores are equipped with computerized checkout equipment that can read the code and automatically ring up the sale. In addition to making it possible for stores to automate part of their checkout work, the UPC, when used in conjunction with a computer, also can function as an automated inventory system. The computer can tell management how much of a specific item is on hand, how fast it is being sold, and when and how much to order.

SYMBOLS ON FOOD LABELS

The symbol "R" on a label signifies that the trademark used on the label is registered with the U.S. Patent Office.

The symbol "C" indicates that the literary and artistic content of the label is protected against infringement under the copyright laws of the United States. Copies of such labels have been filed with the Copyright Office of the Library of Congress.

The symbol which consists of the letter "U" inside the letter "O" is one whose use is authorized by the Union of Orthodox Jewish Congregations of America, more familiarly known as the Orthodox Union, for use of foods which comply with Jewish dietary laws. Detailed information regarding the significance and use of this symbol may be obtained from the headquarters of that organization at 116 E. 27th St., New York, New York 10016.

The symbol which consists of the letter "K" inside the letter "O" is used to indicate that the food is "Kosher," that is, it complies with the Jewish dietary laws, and its processing has been under the direction of a rabbi.

None of the symbols referred to above are required by, or are under the authority of, any of the Acts enforced by the Food and Drug Administration.

Margaret Morrison is a staff writer with FDA's Office of Public Affairs.

Recommendations for Feeding Normal Infants

Samuel J. Fomon, M.D., Lloyd J. Filer, Jr., M.D., Ph.D., Thomas A. Anderson, Ph.D., and Ekhard E. Ziegler, M.D.

From the Department of Pediatrics, University of Iowa, Iowa City

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In technically developed countries, most infants seem to grow normally and to remain healthy in spite of wide differences in feeding practices. One infant may be fed a formula for three months and then be fed whole milk, receiving a wide variety of other foods beginning at 3 or 4 weeks of age. A second infant may receive only infant formula, and a third infant may be fully breast-fed to age 6 months. The infants may or may not receive supplements of various vitamins and minerals. If we detect no differences in health as a result of such divergent feeding practices, it does not necessarily mean that the choice of feeding practice is inconsequential. Rather, the consequences may be too subtle to be detected by casual observation or may be of long-term rather than short-term nature. Little is known about long-term consequences of infant feeding practices.

Meanwhile, infants must be fed and decisions must be made about how this should be done. We have attempted to be as specific as possible in our recommendations for nutritional management of normal full-term infants and have tried to indicate the reasoning behind each recommendation. Definitive studies to guide us in our recommendations regarding many aspects of nutritional management are not yet available. Therefore, our reasoning in some areas is speculative and the recommendations must be considered tentative.

FEEDING TO AGE SIX MONTHS

Breast-Feeding

Any woman with the least inclination toward breast-feeding should be encouraged to do so, and all assistance possible should be provided by nurses, physicians, nutritionists, and other health workers. At the same time, we do not believe that strong social pressures should be exerted to coerce women into breast-feeding, nor do we believe that any woman should be made to feel guilty because she elects not to breast-feed.

Breast-feeding with supplements of vitamin D, iron, and fluoride provides a complete and highly desirable total diet for the infant until 5 or 6 months of age. However, many women will find it nearly impossible to be present for every feeding and we see no objection to offering an occasional feeding by bottle once nursing is well established. If expressed milk from the infant's mother is fed, there is little if any disadvantage. When expression of human milk proves difficult or inconvenient, feeding of an infant formula seems to us to be a satisfactory alternative. It is sometimes said that giving the breast-fed infant a bottle of formula interferes with the success of nursing, sensitizes the infant to foreign protein, and alters the intestinal flora. We are not convinced that an occasional or even daily formula feeding interferes with success of nursing, and believe that some freedom of activity is important for the mother. The questions of possible sensitization to foreign protein and of adverse consequences from alteration of intestinal flora deserve further study, but do not seem to us at present to be strong contraindications to formula feeding.

Supplementation of the diet with vitamin D, iron, and fluoride is recommended (Table). Contrary to some opinions, there is no need for supplementation with vitamin C. However, because no commercially available preparation provides the desired combination, it will general-

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SUPPLEMENTATION OF DIETS OF INFANTS AND TODDLERS*

Milk or Formula	*Desirable Daily Supplements*		
	Vitamin D 400 IU	*Vitamin C† 20 mg*	*Iron‡ 7 mg*
Human milk	+	–	+
Cow milk			
Whole, homogenized, D-fortified§	–	+	+
Evaporated	–	+	+
2%, D-fortified‖	–	+	+
Skim, D-fortified¶	–	+	+
Commercially prepared formula, iron-fortified	–	–	–

*For fluoride supplementation, see text.
†Instead of a vitamin supplement, foods may be given to supply vitamin C (see text).
‡Instead of an iron supplement, infant cereal may be given (see text).
§Not recommended before 7 months of age.
‖Not recommended before 1 year of age.
¶Not recommended before 2 years of age.

ly be most practical to use a preparation providing vitamins A, C, D, and iron. If 400 IU of vitamin D are provided from such a preparation, iron intake will be acceptable. The additional intake of vitamins A and C, although unnecessary, will not be harmful. Fluoride drops may be given separately.

Whether to supplement the diets of breast-fed infants with vitamin D, iron, and fluoride is a matter of vigorous controversy. A report that human milk contains appreciable but variable amounts of a water-soluble vitamin D-sulfate[1] suggests that vitamin D activity of human milk may be greater than was previously recognized. Nevertheless, rickets has been reported in breast-fed infants,[2-6] probably reflecting a combination of low vitamin D intake and minimal exposure to sunlight. We know of no hazard from vitamin D supplementation in the amount recommended and believe that even a slight possibility of rickets should be avoided.

We have estimated[7] that the infant may need to absorb 200 mg of iron during the first year to assure adequate iron nutritional status. This amounts to about 0.55 mg daily if equally divided over the 365 days. In our opinion, there is an advantage in achieving absorption of more than half of this quantity of iron during the first six months (perhaps 0.6 or 0.7 mg daily) because the influence of the physician or other health worker on the nutritional management of the infant is greater during the early months of life than toward the end of the first year. Such quantities of iron cannot be absorbed from human milk. The concentration of iron in human milk is approximately 0.5 mg/liter and the infant is unlikely to consume a liter of milk until he or she is 5 or 6 months of age. If 49% of the iron in human milk is absorbed,[8] daily absorption from this source is likely to average less than 0.25 mg daily.

Although McMillan et al.[9] have suggested that fully breast-fed infants maintain adequate iron nutritional status, their conclusion is based on observations of only four infants. On the other hand, Woodruff et al.[10] reported hemoglobin concentrations of less than 11 gm/dl in one of 12 infants fully breast-fed to age 6 months and in two of eight infants fully breast-fed to age 9 months. Transferrin saturation was less than 16% in four of the 12 infants at age 6 months, and in four of the eight infants at age 9 months.

The strongest argument against the administration of iron to breast-fed infants concerns the possibility that it might increase the risk of infection. Microorganisms added to human milk in vitro multiply more rapidly if iron is added than if no iron is added.[11,12] The effect is believed to be the result of saturation of lactoferrin, an iron-binding protein present in considerable amount in human milk. Lactoferrin normally present in human milk is largely unsaturated with iron, and is believed to compete with microorganisms for iron present in the environment (test tube or intestinal tract) and thus inhibit their growth.[11,13,14] Although the bacteriostatic effect of lactoferrin has been clearly demonstrated in vitro, its importance to the human infant is unknown. Our conclusion, tentatively, is that the possible interference with one system (perhaps a less important system than several others) that may aid in protecting the infant against infection is a reasonable risk to take for the sake of insuring that iron nutritional status remains satisfactory.

Whether or not a lactating woman drinks fluoridated water, the fluoride content of her milk will be low. For this reason, we recommend a small supplement of fluoride (0.25 mg daily) beginning soon after birth for fully breast-fed infants.

Commercially Prepared Formula

An iron-fortified commercially prepared formula is a complete food for infants and requires no supplements of vitamins or minerals. For reasons that will be discussed, we no longer recommend fluoride supplements for infants fed commercially prepared formulas.

The protein source for most commercially prepared formulas is cow milk or soy protein isolate. All or most of the fat is provided by vegetable oils. The milk-based formulas contain lactose as the sole or major carbohydrate and the soy protein isolate-based formulas contain sucrose and corn syrup. For the healthy, full-term infant it probably matters little whether a formula is based on cow milk protein, on a mixture of cow milk protein and partially demineralized whey proteins (also from cow milk), or on soy protein isolate.

There are few indications for feeding commercially prepared formulas that are not fortified with iron. Some physicians are opposed to the use of iron-fortified formulas because of the belief that such feeding results in fussiness, colic, spitting up, diarrhea, or constipation. Other physicians, including the authors, use iron-fortified formulas regularly and consider such manifestations relatively uncommon. Unfortunately, no study that satisfactorily resolves this controversy has been reported in the literature.

A question is often asked about the quantity of formula an infant should be permitted to consume in a 24-hour period. A direct answer cannot be given because of the variability in energy requirements among infants. If an infant is permitted to stop eating at the earliest indication of willingness to stop, he or she will not be likely to be overfed. As a general guide, it may be noted that relatively few infants consume more than 180 ml/kg/day (6 oz/kg/day) after 3 months of age.[7]

Evaporated Milk Formula

Evaporated milk formulas, used mainly because of economic considerations, represent an acceptable feeding for the infant less than 6 months of age. A reasonable formula may be prepared as follows: evaporated milk, 100 ml (3 oz); water, 130 ml (4.5 oz); corn syrup, 10 ml (2 tsp).

Because terminal sterilization is rarely practiced, and because neither it nor other methods have proved effective in controlling growth of microorganisms in home use, preparation of single feedings seems preferable to preparation at one time of all feedings for a 24-hour period. If each feeding is prepared and fed immediately, bacterial growth will not be a problem. The opened can of evaporated milk should be kept under refrigeration when possible.

An infant fed an evaporated milk formula should receive supplements of vitamin C and iron (Table). Because no single preparation provides both vitamin C and iron in the desired dosage, it will be necessary to use two supplements or employ a preparation that provides several vitamins. If dosage of a product providing vitamins A, C, D, and iron is adjusted to provide 7 mg of iron, the intake of vitamin C will be about 25 mg and the additional intake of vitamins A and D, although unnecessary, will present no hazard.

Introduction of Beikost

Discussions with a large number of physicians and nutritionists lead us to believe that most infants in the United States today are fed some beikost (foods other than milk or formula fed to infants) by 2 months of age.[13] Such early introduction of beikost appears to be explained largely by social pressures (how most other infants are being fed), aggressive marketing by the infant food industry, and by the belief that feeding of "solid" food will help the infant sleep through the night.

Whether early introduction of beikost contributes to development of allergic reactions is uncertain. Our major objection to the introduction of beikost before 5 months of age is based on the possibility that it may interfere with establishing sound eating habits and contribute to overfeeding. If an infant is to be encouraged to discontinue eating at the earliest sign of satisfaction, it must be possible for him to communicate in some way with the individual who is feeding him. At 5 or 6 months of age, the infant will be able to sit with support and will have good neuromuscular control of the head and neck. He or she will be able to indicate desire for food by opening the mouth and leaning forward, and to indicate disinterest or satiety by leaning back and turning away. Until the infant can express these feelings, feeding of beikost will probably represent a type of forced feeding.

We are unimpressed with the argument that earlier introduction of beikost is desirable because it will cause the infant to sleep through the night. If, in fact, the feeding of beikost does accomplish this goal, we presume that the effect must be achieved through providing greater caloric intake at the feeding. The practice, therefore, is a type of overfeeding and does not seem conducive to establishing habits of eating in moderation.

Furthermore, we question the desirability of extending the interval between feedings during the early months of life. Throughout most of the history of the human race, infants were probably fed ad libitum, the infant nursing frequently throughout the 24-hour period with rather small amounts consumed at each feeding. Such feeding practices are still observed in many nonindustrialized societies and may have significant advantages. A number of studies of experimental animals and several studies of human subjects suggest that consumption of a diet in small frequent feedings is preferable to consumption of the same amount of the same food in large, widely spaced meals.

The rather extensive earlier literature has been reviewed by Fábry and Tepperman.[16] In studies of rats, feeding of large meals at infrequent intervals appears to promote increased deposition of body fat even though total calorie intake may be somewhat less than in ad libitum-fed control animals. An increased capacity to synthesize fat from carbohydrate ("adaptive hyperlipogenesis") appears to reflect a complex set of changes occurring in the gastrointestinal tract, and in liver and adipose tissue. Biosynthesis of cholesterol as well as triglycerides is increased.[17] Meal-fed rats develop massive hypertrophy of the stomach and increased absorbing surface of the intestinal epithelial cells. Activity of a number of enzymes in liver and adipose tissue is increased.[18,19]

Studies of human adults suggest that consumption of large meals at widely spaced intervals (as opposed to small meals consumed frequently) leads to increased serum concentration of cholesterol and impaired glucose tolerance.[16,20] Although the effects of feeding frequency in infancy have not been studied, there is little basis for believing that widely spaced feedings are desirable. Thus, on the basis of metabolic considerations, it may not be in the infant's best interests to get him to sleep through the night as early in life as possible, or to adapt as early as possible to a pattern of three feedings daily.

FEEDING AFTER AGE SIX MONTHS

Breast-Feeding

For thousands of years of human history, the age of weaning probably has been between 2 and 3 years.[21] If the mother desires, breast-feeding may continue during the second year of life. However, it is reasonable to offer other foods beginning at 5 or 6 months of age. An iron-fortified cereal commercially prepared for infants should be introduced first. It is then no longer necessary to administer the iron supplement given previously. Vitamin D supplementation should be continued. Fluoride supplements should be provided in accordance with the fluoride content of the local water supply. When cereal is well accepted, other foods should be introduced. Either commercial or home-prepared foods may be fed and, generally, not more than one or two new foods should be introduced in the same week.

As the percentage of calories supplied by beikost increases, parents need to be cautioned that the partially breast-fed infant needs some foods rich or moderately high in protein. Many foods commonly fed to infants (eg, fruits, mashed potatoes, hominy grits) provide most of the energy in the form of carbohydrate and are therefore not suitable as the only beikost items for breast-fed infants.

Bottle Feeding

As with the breast-fed infant, it is reasonable to introduce beikost to the bottle-fed infant at 5 to 6 months of age. By 7 months of age it seems reasonable to limit the quantity of milk or formula to approximately 900 ml (30 oz) daily.

When cow milk rather than formula is fed, vitamin C should be provided. Foods that may be fed in lieu of a supplement of vitamin C are strained fruit juices marketed for infants (one half of a 4.2 fl oz can or jar), fresh or frozen orange juice (1.5 oz), most strained fruits marketed for infants (one jar), or strained cereal with applesauce and bananas (one jar). Fluoride supplementation should be provided in accordance with the fluoride content of the local water supply.

Iron should be provided either from an iron-fortified formula, from a drop preparation (of ferrous sulfate or another iron salt of high bioavailability) or from iron-fortified infant cereal.

Cereal

Dry cereals prepared commercially for infants are fortified with electrolytic iron powder of small particle size. Animal studies suggest that this form of iron is of high bioavailability. Three level tablespoons of dry cereal diluted with milk or formula will make a serving of about 60 gm, providing about 7 mg of iron.

According to current practice, infant cereals are introduced into the infant's diet during the first few months of life and feeding of these cereals commonly is discontinued by six months of age. We recommend introduction of cereals at 5 to 6 months of age and daily administration thereafter until 18 months of age. For infants who are not receiving either iron-fortified formulas or infant cereals, a medicinal iron preparation is desirable.

Commercially prepared cereal-fruit combinations (eg, oatmeal with applesauce and bananas) are fortified with ferrous sulfate, approximately 5 mg of iron per jar (135 gm). Although these cereal-fruit combinations may be substituted for the dry, precooked cereals, they are considerably more expensive per unit of iron.

Iron-fortified cereals not specifically prepared for infants contain a variety of types of iron, some probably of poor bioavailability. In general, they should not be substituted for infant cereals during the first 18 months of life.

Other Beikost

When introduction of beikost is delayed until 5 or 6 months of age, the order of introduction of various foods seems to be of relatively little importance. We are not aware of evidence that introduction of fruits before vegetables will influence acceptance of vegetables. With the exception of the breastfed infant mentioned previously, foods of high protein content are not necessary. Infant formula or whole cow milk provide an abundance of protein and additional protein is superfluous.

Feeding of fruit juice by bottle should be avoided. The use of a bottle as a pacifier may contribute to development of "nursing bottle caries," with destruction of the maxillary incisors.[22] We recommend that fruit juice be fed only by cup, thus eliminating any possibility of its use as a pacifier. Other sweet drinks should be avoided, or at least not fed by bottle.

Either commercially prepared or home-prepared foods may be fed and only a few cautions seem necessary (with earlier introduction of beikost, additional precautions are desirable[23]). Fruits and vegetables marketed in cans that are not specifically designed for infants should be avoided because of variable and sometimes high lead content and because, in the case of vegetables, sodium content may be relatively high. Infant foods may be prepared in the home from fresh or frozen foods. Oxidation of certain vitamins and polyunsaturated fats will be minimized if foods are not overcooked and only lightly blended or simply mashed with a fork (such as bananas, a natural convenience food). Because little currently is known about possible early imprinting of taste preferences, it seems desirable to use salt and sugar sparingly in food preparation for infants. For this reason, it is preferable to avoid fruits packed in heavy syrup.

Special attention should be paid to cleanliness in all aspects of food preparation for infants. Portion sizes should be individualized. Mashed or blended food may be frozen in plastic ice cube trays and then stored in a plastic bag in the freezer for several weeks. Several cubes may constitute a serving. When food is prepared and not frozen, it should be refrigerated and fed within 24 hours.

Cow Milk: Whole, Skim, "Two Percent"

Feeding of an iron-fortified commercially prepared formula may be continued well into the latter part of the first year of life. However, when an infant over 6 months of age is eating approximately 200 gm of beikost daily (the equivalent of about 1.5 jars of strained food commercially prepared for infants), there is no objection to feeding homogenized, vitamin D-fortified whole milk. Because most beikost items are rich in carbohydrate, whereas whole milk is rich in protein and fat, the combination provides a reasonable distribution of calories from protein, fat, and carbohydrate. Equal parts of evaporated milk and water may be fed instead of homogenized whole milk.

We consider it unlikely that the introduction of whole cow milk in the infant's diet during the latter part of the first year of life will provoke nutritionally significant gastrointestinal blood loss. It has been recognized for years that increased occult loss of blood from the gastrointestinal tract occurs in some infants with iron deficiency anemia when they are fed whole cow milk. The report of Wilson et al.[24] suggests that such milk-induced gastrointestinal blood loss may commonly accompany iron-deficiency anemia, at least under some circumstances. The suggestion that milk-induced gastrointestinal blood loss may be an important cause of anemia of infants[25-28] is based primarily on observations of infants fed whole milk during the early months of life. We consider such observations to have little relevance to recommendations for feeding older infants who are receiving at least 200 gm of beikost daily and either an iron-fortified infant cereal or a medicinal iron supplement. Our own unpublished observations indicate that clinically significant gastrointestinal blood loss must be infrequent under the circumstances to which our recommendations apply.

The feeding of milks of reduced fat content is not recommended during infancy. Our objections to the use of skim milk in infant feeding are based on the observation that when skim milk and beikost are fed ad libitum, volumes of food consumed are large but calorie intakes are low (80 kcal/kg/day for male infants between 4 and 6 months of age).[29] The infants continue to gain weight, although not as rapidly as infants fed formula or whole milk, and gain normally in length. However, under these circumstances, skinfold thickness rapidly decreases, suggesting that body energy stores are being depleted. The consequences of rapidly decreasing body stores of fat during infancy are unknown but it appears probable that the long-term (and perhaps even the short-term) effects may be unfavorable. It seems unlikely that the goal of establishing habits of eating in moderation will be reached by allowing regular consumption of enormous volumes of calorically dilute food.

"Two percent milk" is a term generally employed to describe milk with fat content of 2%, often with the addition of 2% fat-free milk solids. With ad libitum feeding, infants will consume sufficient quantity of such milk to achieve caloric intakes similar to those of infants fed formulas or whole milk. Therefore, the infants will probably not be required to mobilize body stores of fat, as seems to be the case with infants fed skim milk. Nevertheless, the need to consume relatively large volumes of food is unlikely to be conducive to establishment of sound eating habits.

Fluoride Supplementation

The effect of fluoride in the prevention of dental caries occurs at least in part through the incorporation of fluoride into the crystalline structure of the dental enamel.[22] Enamel formation progresses actively in the deciduous teeth and begins in several of the permanent teeth during the early months of life. It had previously been assumed[22] that formula-fed infants living in communities with nonfluoridated drinking water, and all infants who are breast-fed or fed whole cow milk, would be likely to receive only a small fraction of a milligram of fluoride daily and would therefore benefit from administration of a fluoride supplement. However, subsequently it became evident that the concentrations of fluoride in infant formulas and in certain foods commercially prepared for infants are greater than had been recognized.[30,31]

In addition, mild enamel fluorosis has been reported in the permanent incisors of children who had received fluoride supplements during early infancy.[32,33] Forsman[33] has concluded that the daily intake of fluoride required to produce fluorosis is 0.1 to 0.3 mg/kg body weight. Intakes of approximately 0.1 mg/kg/day seemed likely to be achieved by some formula-fed infants in the United States without fluoride supplementation. Thus, it was recommended[34] that no fluoride supplementation be given to formula-fed infants during the first six months of life.

More recently, the manufacturers have taken steps to reduce the fluoride content of commercially prepared infant formulas and cereals. Assuming that these reductions occur, it is recommended that a supplement of fluoride of 0.25 mg/day be given to breast-fed infants and to infants living in areas in which the fluoride content of the water is 0.3 ppm or less.

Because children less than 3 years of age are apt to swallow much of the toothpaste used in brushing their teeth, and because there may be 1 mg of fluoride per gram of fluoridated toothpaste, it seems desirable to avoid use of fluoridated toothpaste in this age group.

Education

It is evident that physicians and other health workers can only advise, whereas parents actually deliver health care, including nutritional care. Therefore, a major goal of nutritional management of infants must be education of the parents. The relatively simple feeding program suggested here permits the health worker to focus on educational considerations during the first five or six months without the distractions associated with early introduction of beikost.

From the time of the infant's first feedings, parents should be taught about the importance of sound eating habits. Infants should be permitted to stop eating at the earliest sign of willingness to stop—not at a point of maximum consumption. No attempt should be made to get the infant to drain the last drop from a bottle or, later on, to finish the last spoonful in the dish. If some formula remains in the bottle, it may be refrigerated and fed at the beginning of the next feeding. An infant should not be encouraged to eat as much as possible at bedtime to get him or her to sleep through the night.

Reasons for deferring introduction of beikost should be explained. The importance of achieving adequate daily intakes of iron should be stressed. The use of a bottle as a pacifier should be discouraged and parents should be instructed regarding the hazards of nursing bottle caries from such use once the teeth have erupted.

SUMMARY

Our current recommendations for infant feeding are based on relatively few facts and many opinions. In a number of areas of infant feeding, the crucial experiments have not yet been carried out and in some areas our experimental methods are too crude to permit design of appropriate studies. Changes in recommendations are to be anticipated as new evidence becomes available. Meanwhile, we make the following recommendations.

First Six Months

Breast-feeding is preferred. The breast-fed infant should receive supplements of iron (7 mg daily from ferrous sulfate or other preparation of high bioavailability), vitamin D (400 I.U. daily) and fluoride (0.25 mg daily). An occasional formula feeding is permissible. Infants fed commercially prepared, iron-fortified formulas require no supplements except fluoride (depending on fluoride content in local drinking water). Evaporated milk formulas are satisfactory alternatives to commercially prepared formulas. Infants receiving evaporated milk formulas should receive supplements of vitamin C (20 mg) and iron (7 mg) daily.

Beikost should not be introduced until 5 to 6 months of age.

Parents should be aware of the possibility that eating habits established during infancy may contribute to overeating and consequent obesity in later life. From the time of the first feeding, the infant should be permitted to stop eating at the earliest indication of willingness to stop. Attempts to provide as many calories as possible (such as introduction of cereal at bedtime early in life to get the infant to sleep through the night) should be avoided.

After Six Months

Between 5 and 6 months of age, an iron-fortified dry cereal commercially prepared for infants should be introduced. Such cereals should be fed daily until 18 months of age to assure an adequate intake of iron. Other foods, commercially or home-prepared, should then be introduced, not more than one or two new foods in the same week.

There is no reason to discontinue breast-feeding before 18 to 24 months of age, but other foods should be included in the diet beginning at 5 or 6 months of age and some of these foods should be relatively rich in protein.

When intake of foods other than formula amounts to approximately 200 gm daily, formula may be replaced by homogenized, vitamin D-fortified whole milk. Milks of reduced fat content are not recommended. When whole milk is fed, a source of vitamin C is required.

A summary of desirable supplements for infants is presented in the Table in relation to type of milk or formula being fed.

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MINI FOOD COMPOSITION TABLE[1]

FOOD	SERVING SIZE OR WEIGHT	FOOD ENERGY Calories	PROTEIN grams	IRON[2] mg.	CALCIUM[2] mg.	VITAMIN A[3] I.U.	VITAMIN C[2] mg.
Almonds	10 nuts	60	1.9	0.5	23	0	Trace
Apple (3 per lb.)	1 medium	80	0.3	0.4	10	120	6
Apple Juice	6 oz.	87	0.2	1.1	11	--	2
Applesauce, Unsweetened	1 cup	100	0.5	1.2	10	100	2
Apricots, Canned	1 cup	93	1.7	0.7	30	4500	10
Asparagus, Canned	1 cup	44	4.6	4.1	44	1240	37
Avocado	1/2 fruit	188	2.4	0.7	11	330	16
Bacon, 20 slices per lb., raw	2 slices	86	3.8	0.5	2	0	--
Bananas, Medium	1 banana	101	1.3	0.8	10	230	12
Beans and Frankfurters	1 cup	367	19.4	4.8	94	330	Trace
Beef, boneless chuck, lean (braised or stewed)	1 cup	300	42.0	5.3	18	20	--
Beef and Vegetable Stew, Canned	1 cup	194	14.2	2.2	29	2380	7
Beer, 4.5% Alcohol	12-oz. can	151	1.1	Trace	18	--	--
Beets, Cooked	1 cup, diced or sliced	54	1.9	0.9	24	30	10
Beet greens, Cooked	1 cup	26	2.5	2.8	144	7400	22
Biscuit, Enriched	1 biscuit, 2" diam.	103	2.1	0.4	34	Trace	Trace
Blueberries, Raw	1 cup	90	1.0	1.5	22	150	20
Bologna	1 slice, 1 oz.	86	3.4	0.5	2	--	--
Bread: Cracked Wheat	1 slice, 1 oz.	66	2.2	0.3	22	Trace	Trace
French, Enriched	1 slice, 1 oz.	73	2.3	0.6	11	Trace	Trace
Raisin, Enriched	1 slice, 1 oz.	66	1.7	0.3	18	Trace	Trace
Rye	1 slice, 1 oz.	61	2.3	0.4	19	0	0
White, Enriched	1 slice, 1 oz.	74	2.4	0.7	26	Trace	Trace
Whole Wheat	1 slice, 1 oz.	61	2.6	0.8	25	Trace	Trace
Broccoli, Frozen	10 oz., chopped	82	9.1	2.0	165	7380	200
Brownie, Commercial	1, 1 oz.	117	1.4	0.5	11	57	Trace
Butter	1 Tbsp.	102	0.1	0	3	470	0
Buttermilk, from Skim	1 cup	88	8.8	0.1	296	10	2
Cabbage, Raw	1 cup, shredded	17	0.9	0.3	34	90	33

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[1] Adapted from Nutritive Value of American Foods in Common Units, Agriculture Handbook no. 456, USDA

[2] mg. = milligrams

[3] I.U. = International Units

MINI FOOD COMPOSITION TABLE

FOOD	SERVING SIZE OR WEIGHT	FOOD ENERGY Calories	PROTEIN grams	IRON mg.	CALCIUM mg.	VITAMIN A I.U.	VITAMIN C mg.
Cake, Angelfood	1 slice, 1 oz.	81	2.1	0.1	3	0	0
Chocolate Cupcake, Uniced	1, 1 oz.	103	1.3	0.2	21	45	Trace
Candy, Milk Chocolate	1 oz.	147	2.2	0.3	65	80	Trace
Jelly Beans	1 oz., 10 jellybeans	104	Trace	0.3	3	0	0
Cantaloup	1 cup, 20 balls	48	1.1	0.6	22	5440	53
Carrots, Raw	1, 3 oz.	30	0.8	0.5	27	7930	6
Cashew Nuts, Roasted in Oil	1 oz.	159	4.9	1.1	11	30	--
Cauliflower, Raw	1 cup, chopped	31	3.1	1.3	29	70	90
Catsup	1 Tbsp.	16	0.3	0.1	3	210	2
Celery, Raw	1 cup, chopped	20	1.1	0.4	47	320	11
Cheese, American	1 slice, 1 oz.	100	6.3	0.2	188	330	0
Cheddar	1 oz.	113	7.1	0.3	213	370	0
Cottage, Small Curd	1 cup	223	28.6	0.6	197	360	0
Parmesan	1 Tbsp., shredded	21	1.9	Trace	61	60	0
Swiss	1 oz.	105	7.8	0.3	262	320	0
Cheese Food/Spread	1 Tbsp.	40	2.2	0.1	79	120	0
Cherries, Sweet, Raw	10 cherries	47	0.9	0.3	15	70	7
Chicken, Light Meat	2 oz.	94	17.9	0.7	6	34	--
Dark Meat	2 oz.	100	15.9	1.0	7	84	--
Chili with Beans, Canned	1 cup	339	19.1	4.3	82	150	--
Chow Mein, Canned, Chicken without Noodles	1 cup	95	6.5	1.3	45	150	13
Clams, Canned, Minced	1 cup	157	25.3	--	--	--	--
Collards, Frozen	10 oz. container, chopped	91	8.8	3.1	542	19310	193
Cookies, Chocolate Chip	2 oz., 10 small	250	2.9	1.0	21	60	Trace
Fig Bars	2 oz., 4 cookies	200	2.2	0.6	44	60	Trace
Vanilla Wafers	1 oz., 10 cookies	139	1.6	0.1	12	40	0
Corn, Canned	1 cup solids	139	4.3	0.8	8	580	7
Creamed	1 cup	210	5.4	1.5	8	840	13
on the cob	1 5" ear	70	2.5	0.5	2	310	7
Corn Flakes, Fortified	1 cup	97	2.0	0.6	--	1180	9
Corn Grits, Cooked, Enriched	1 cup	125	2.9	0.2	2	150	0
Corn Bread, from mix	2 oz.	178	3.8	0.8	133	130	Trace

MINI FOOD COMPOSITION TABLE

FOOD	SERVING SIZE OR WEIGHT	FOOD ENERGY Calories	PROTEIN grams	IRON mg.	CALCIUM mg.	VITAMIN A I.U.	VITAMIN C mg.
Corned Beef, Canned	2 oz.	123	14.3	2.4	11	--	0
Corned Beef Hash, Canned	1 cup	398	19.4	4.4	29	--	--
Crackers, Graham	2, 2 1/2" square	55	1.1	0.2	6	0	0
Saltine	10 crackers	123	2.6	0.3	6	0	0
Cranberry Juice Cocktail	1 cup	164	0.3	0.8	13	Trace	40
Cream, "1/2 and 1/2"	1 Tbsp.	20	0.5	Trace	16	70	Trace
Sour	1 Tbsp.	25	Trace	Trace	14	90	Trace
Whipped Topping	1 Tbsp., from can	10	Trace	Trace	3	30	0
Cucumbers, Raw	1 cup, sliced	16	0.9	1.2	26	260	12
Dandelion Greens, Cooked	1 cup	35	2.1	1.9	147	12290	19
Dates	10 dates	219	1.8	2.4	47	40	0
Doughnut, Cake, Plain	1, 2 oz.	227	2.7	0.8	23	50	Trace
Egg, Raw	1 large	82	6.5	1.2	27	590	0
Fish Stick	1 stick, 1 oz.	50	4.7	0.1	3	0	--
Frankfurter/Hot Dog	1, 2 oz.	176	7.1	1.1	4	--	--
Fruit Cocktail, Canned in Heavy Syrup	1 cup	194	1.0	1.0	23	360	5
Gelatin Dessert	1 cup	142	3.6	--	--	--	--
Gingerbread	1" cube	17	0.2	0.1	5	Trace	Trace
Grapefruit, Pieces	1 cup	72	0.9	0.7	28	140	67
Grapefruit Juice, Unsweetened	6 oz.	76	0.9	0.2	19	20	72
Grapes, Thompson Seedless	1 cup	107	1.0	0.6	19	160	6
Grape Juice	6 oz.	125	0.4	0.6	21	--	Trace
Green Beans, Canned	1 cup	43	2.4	2.9	81	690	10
Haddock, Oven Fried	1 fillet, 4 oz.	182	21.6	1.3	44	--	2
Halibut, Broiled with Butter	1 fillet, 4.5 oz.	214	31.5	1.0	20	850	--
Ham, Baked	3 oz.	318	19.6	2.6	9	0	--
Hamburger, 21% fat	4 oz.	303	20.2	3.1	11	40	--
Honey	1 Tbsp.	64	0.1	0.1	1	0	Trace
Ice Cream, 10% fat	1 cup	257	6.0	0.1	194	590	1
Ice Milk, 5% fat: Hardened	1 cup, 8 oz.	199	6.3	0.1	204	280	1
Soft-serve	1 cup, 8 oz.	266	8.4	0.2	273	370	2
Jam	1 Tbsp.	54	0.1	0.2	4	Trace	Trace
Jelly	1 Tbsp.	49	Trace	0.3	4	Trace	1

MINI FOOD COMPOSITION TABLE

FOOD	SERVING SIZE OR WEIGHT	FOOD ENERGY Calories	PROTEIN grams	IRON mg.	CALCIUM mg.	VITAMIN A I.U.	VITAMIN C mg.
Kale, Cooked	1 cup	43	5.0	1.8	206	9130	102
Lamb, Broiled Chop	2.5 oz. cooked weight (4 per lb.)	255	15.6	0.9	6	--	--
Lard	1 Tbsp.	117	0	0	0	0	0
Lemon, 2 1/4" diam.	1 lemon	24	1.0	0.5	23	20	46
Lettuce, Raw	1 cup, chopped or shredded	7	0.5	0.3	11	180	3
Lima Beans, Frozen, Cooked	1 cup	168	10.2	2.9	34	390	29
Liver, Beef, Fried	3 oz.	195	22.4	7.5	9	45390	23
Liverwurst	1 oz.	90	4.2	1.7	3	1850	--
Lunchmeat, Boiled Ham	1 oz.	66	5.4	0.8	3	0	--
Macaroni and Cheese, Canned	1 cup	228	9.4	1.0	199	260	Trace
Macaroni, Enriched, Cooked	1 cup	192	6.5	1.4	14	0	0
Margarine, Regular	1 Tbsp.	102	0.1	0	3	470	0
Mayonnaise	1 Tbsp.	101	0.2	0.1	3	40	--
Milk, Whole, 3.5%	1 cup	159	8.5	0.1	288	350	2
Skim	1 cup	88	8.8	0.1	296	10	2
Chocolate, from Whole	1 cup	213	8.5	0.5	278	330	3
Evaporated	1 cup	345	17.6	0.3	635	810	3
Molasses, Medium	1 Tbsp.	46	--	1.2	58	--	--
Muffin, from Mix	1 muffin (1/4 cup batter)	130	2.8	0.6	96	100	Trace
Mushrooms, Fresh	1 cup, slices	20	1.9	0.6	4	Trace	2
Mustard, Yellow	1 Tsp.	4	0.2	0.1	4	--	--
Mustard Greens, Boiled	1 cup	32	3.1	2.5	193	8120	67
Noodles, Cooked, Egg, Enriched	1 cup	200	6.6	1.4	16	110	0
Chow Mein	1 cup	220	5.9	--	--	---	--
Oatmeal, Cooked	1 cup	133	4.8	1.4	22	0	0
Ocean Perch, Breaded, Frozen	1 fillet, 3 oz.	281	16.6	--	--	--	--
Oil	1 Tbsp.	120	0	0	0	--	0
Olives, Black	10 extra large	87	0.6	0.8	50	30	--
Onions, Raw	1 cup, chopped	65	2.6	0.9	46	70	17
Oranges, Whole	1, 2 5/8" diam.	64	1.3	0.5	54	260	66
Orange Juice	1 cup	112	1.7	0.5	27	500	124
Pancakes, Enriched	1, 4" diam.	62	1.9	0.4	27	30	Trace
Parsnips, Boiled	1 cup, diced	102	2.3	0.9	70	50	16

MINI FOOD COMPOSITION TABLE

FOOD	SERVING SIZE OR WEIGHT	FOOD ENERGY Calories	PROTEIN grams	IRON mg.	CALCIUM mg.	VITAMIN A I.U.	VITAMIN C mg.
Peaches, Canned in Heavy Syrup	1 cup, sliced	200	1.0	0.8	10	1100	8
Peanuts, Roasted in Shell	10, jumbo	105	4.7	0.4	13	--	0
Peanut Butter	1 Tbsp.	94	4.0	0.3	9	--	0
Pears, Canned in Heavy Syrup	1 cup	194	0.5	0.5	13	10	3
Peas, Canned	1 cup	164	8.7	4.2	50	1120	22
Frozen, Cooked	1 cup	109	8.2	3.0	30	960	21
Peppers, Green, Raw	1 cup, chopped	33	1.8	1.1	14	630	192
Pickles, Dill	1, 4" long	15	0.9	1.4	35	140	8
Sweet	1, 3" long	51	0.2	0.4	4	30	2
Relish	1 Tbsp.	21	0.1	0.1	3	--	--
Pie, Apple 9"	1/6 of pie	404	3.5	0.5	13	50	2
Custard 9"	1/6 of pie	331	9.3	0.9	146	350	0
Lemon Meringue 9'	1/6 of pie	357	5.2	0.7	20	240	4
Pumpkin 9"	1/6 of pie	321	6.1	0.8	78	3750	Trace
Pineapple, Juice Pack	1 cup	96	0.7	0.7	30	120	17
Pineapple Juice	1 cup	138	1.0	0.8	38	130	23
Pizza, 12" Cheese	1/8 of pizza	147	5.5	0.5	86	230	4
Plums, Canned in Heavy Syrup	1 cup	214	1.0	2.3	23	3130	5
Popcorn, Plain	1 cup	23	0.8	0.2	1	--	0
Pork Chop, Broiled	1 chop (3 per lb.)	305	19.3	2.7	9	0	--
Pork Sausage, Cooked	1 link, 1/2 oz.	46	2.2	0.3	1	--	--
Potatoes, Raw	1 potato, (3 per lb.)	86	2.4	0.7	8	Trace	23
French Fried	10 medium strips	137	2.2	0.7	8	Trace	11
Potato Chips	10 chips	114	1.1	0.4	8	Trace	3
Potato Salad	1 cup	248	6.8	1.5	80	350	28
Pretzels	1 oz.	111	2.8	0.4	6	0	0
Prunes	10 prunes	260	2.1	4.0	52	1630	3
Prune Juice	6 oz.	148	0.8	7.9	27	--	4
Pudding, Chocolate, Instant	1 cup, made from mix with whole milk	325	7.8	1.3	374	340	2
Raisins	1 Tbsp.	26	0.2	0.3	6	Trace	Trace
Raspberries, Raw	1 cup	70	1.5	1.1	27	160	31
Rhubarb, Raw	1 cup, diced	20	0.7	1.0	117	120	11
Rice, White, Cooked, Enriched	1 cup	223	4.1	1.8	21	0	0

MINI FOOD COMPOSITION TABLE

FOOD	SERVING SIZE OR WEIGHT	FOOD ENERGY Calories	PROTEIN grams	IRON mg.	CALCIUM mg.	VITAMIN A I.U.	VITAMIN C mg.
Rolls and Buns:							
Hamburger and Hot Dog, Enr.	1 roll	119	3.3	0.8	30	Trace	Trace
Hard Roll, Enriched	1 roll, 1 oz.	78	2.5	0.6	12	Trace	Trace
Dinner Roll, Enriched	1 roll	75	2.1	0.5	9	Trace	Trace
Salad Dressings:							
Blue Cheese	1 Tbsp.	76	0.7	Trace	12	30	Trace
French	1 Tbsp.	66	0.1	0.1	2	--	--
Italian	1 Tbsp.	83	Trace	Trace	2	Trace	--
Thousand Island	1 Tbsp.	80	0.1	0.1	2	50	Trace
Salami	1 oz.	128	6.7	1.0	4	--	--
Salmon, Pink, Canned	1 cup	310	45.1	1.8	431	150	--
Sardines	1 oz.	88	5.8	1.0	100	50	--
Sauerkraut, Canned	1 cup	42	2.4	1.2	85	120	33
Sherbet, Orange	1 cup	259	1.7	Trace	31	120	4
Shrimp, French Fried	1 oz.	64	5.8	0.6	20	--	--
Canned	1 cup	148	31.0	4.0	147	80	--
Sirup, Table	1 Tbsp.	59	0	0.8	9	--	0
Soft Drink, Cola Type	12-oz. can	144	0	0	0	0	0
Soup, Undiluted, Canned							
Chicken Noodle	10 1/2-oz. can	158	8.3	1.2	21	90	Trace
Cream of Mushroom	10 1/2-oz. can	331	5.7	0.9	101	180	Trace
Tomato	10 1/2-oz. can	220	4.9	1.8	34	2470	31
Vegetable Beef	10 1/2-oz. can	198	12.8	1.8	31	6710	--
Soybean Curd (tofu)	4 oz.	86	9.4	2.3	154	0	0
Spaghetti, Cooked "al dente"	1 cup (enriched)	192	6.5	1.4	14	0	0
Spareribs, Braised	6.3 oz. (from 1 lb.)	792	37.4	4.7	16	0	--
Spinach, Frozen, Leaf	10-oz. container	71	8.5	7.1	298	23000	99
Squash, Summer, Cooked	1 cup, cubed	29	1.9	0.8	53	820	21
Winter, Cooked	1 cup, mashed	129	3.7	1.6	57	8610	27
Strawberries, Raw	1 cup, whole	55	1.0	1.5	31	90	88
Sugar, Granulated	1 Tbsp.	46	0	Trace	0	0	0
Sunflower Seed Kernels	1 Tbsp.	50	2.1	0.6	11	4	0
Sweet Potatoes, 5" long	1 potato	185	2.8	1.1	52	14260	34
Tangerine	1 large	46	0.8	0.4	40	420	31

MINI FOOD COMPOSITION TABLE

FOOD	SERVING SIZE OR WEIGHT	FOOD ENERGY Calories	PROTEIN grams	IRON mg.	CALCIUM mg.	VITAMIN A I.U.	VITAMIN C mg.
Tomatoes, Raw	1, 3 1/2 oz.	20	1.0	0.5	12	820	21
Canned	1 cup	51	2.4	1.2	14	2170	41
Tomato Juice	1 cup	46	2.2	2.2	17	1940	39
Tortilla, Flour[4]	1, 1 oz.	78	2.0	0.8	0	--	--
Tuna, Drained Solids, in Oil	1 cup	315	46.1	3.0	13	130	--
Turkey, Light Meat	3 oz.	150	28.0	1.0	--	--	--
Dark Meat	3 oz.	173	25.5	2.0	--	--	--
Turnips, Boiled	1 cup, cubed	36	1.2	0.6	54	Trace	34
Turnip Greens, Boiled	1 cup	29	3.2	1.6	267	9140	100
Veal, Braised or Broiled	3 oz.	184	23.0	2.7	9	--	--
Waffles, Frozen, Enriched	1, 1.2 oz.	86	2.4	0.6	41	40	Trace
Watermelon, Diced Pieces	1 cup	42	0.8	0.8	11	940	11
Wheat Flakes, Fortified	1 cup	106	3.1	--	12	1410	11
Wheat Germ	1 Tbsp.	23	1.8	0.5	3	10	1
Yogurt, Plain, Whole Milk	1 container/8 oz.	140	6.8	0.1	251	320	2
Plain, from Part Skim Milk	1 container/8 oz.	113	7.7	0.1	271	150	2

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[4] Calculated from nutrition information label on product package

RESOURCE LIST

Annotated Bibliography

Adams, Catherine E. *Nutritive Value of American Foods in Common Units.* Agriculture Handbook No. 456. U. S. Department of Agriculture, Washington, D.C.: U. S. Government Printing Office, 1975.

A comprehensive listing of commonly used measures of commonly used foods.

Adams, Catherine F., and Richardson, Martha. *Nutritive Value of Foods.* Home and Garden Bulletin No. 72. U. S. Department of Agriculture. Washington, D.C.: U. S. Government Printing Office, 1981.

A less comprehensive listing than Ag. Handbook No. 456, but probably more useful to the general consumer. Includes updated information on breakfast cereals, dairy products and fatty acid content of food.

Barr, Linda, and Monserrat, Catherine. *Teenage Pregnancy: A New Beginning.* Albuquerque, N.M.: New Futures, Inc., undated.

Written for the teenager. Covers many aspects of teenage pregnancy; several excellent charts and information sheets that would make good hand-outs.

Boyd, Fannie Lee. *Fun and Learn: Nutrition Games.* Athens, Georgia: University of Georgia, 1974.

A collection of "make-your-own" games, many of which could be adapted for use in teenage pregnancy programs to teach nutrition.

Brody, Jane. *Jane Brody's Nutrition Book.* New York: W. W. Norton and Company, 1981.

Readable, non-technical reference, covering many facets of nutrition. Of particular interest would be chapters on pregnancy and how to feed babies and children. Includes recipes, statistical and historical data.

Byall, Betty, and Chan, Teresa Y. *Feeding Advice for You and Your Baby.* Los Angeles: Nutrition in the Life Cycle, 1980.

Short section on nutrition during pregnancy. Most of booklet is devoted to infant nutrition, with examples of menus at various ages.

Committee on Maternal Nutrition, Food and Nutrition Board, National Research Council, National Academy of Sciences. *Maternal Nutrition and the Course of Pregnancy*. Washington, D.C.: U. S. Government Printing Office, 1970.

Fairly old, but technically useful resource. Contains many scientific references, pre-1970.

Corruccini, Carol G., and Cruskie, Patricia E. *Nutrition during Pregnancy and Lactation*. Sacramento: California Department of Health, 1975.

Published for health-care professionals; identifies nutritional risk factors in pregnancy, most of which apply to adolescent pregnancy. Chapters on nutritional recommendations and daily food guide could be useful in preparing hand-outs on foods in each food group.

Davis, Carole A., and others. *Food*. Home and Garden Bulletin No. 228. U. S. Department of Agriculture. Washington, D.C.: U. S. Government Printing Office, 1979.

Excellent, colorful presentation of four (plus one) food groups. Emphasizes importance of breakfast; discusses sugar, salt, fat, fiber, and snacking. Recipes included for each of four food groups.

Dreith, Rita Jean Vallero. *Picture Yourself a Cook*. Denver, Colorado: By the Author, 1939 S. Kearney Way, 1977.

A guide to cooking for non-readers. Example of using pictures to help in cooking. Concepts could be useful for teenagers with reading difficulties.

Elswick, Linda L. *Teenage Pregnancy and Nutrition*: *A Review*. Albany, New York: The University of the State of New York, 1980.

Published by the Nutrition Education and Training (NET) Program. Good overview of nutrition in teenage pregnancy. Extensive list of references and selected annotated bibliography. Eight journal article reprints included.

Ewald, Ellen Buchman. *Recipes for a Small Planet*. New York: Ballantine Books, 1973.

Short explanation of protein complementarity. Most of book is dedicated to recipes using the concept. Good for introducing unusual or new foods to the students.

Farb, Peter, and Armelagos, George. *Consuming Passions*: *The Anthropology of Eating*. Boston: Houghton Mifflin Company, 1980.

A witty, entertaining coverage of the many aspects of eating. Contains several pages on eating taboos during pregnancy. Could be good outside reading for older student. Extensive reference list.

Feeding Infants: A Nutrition Monograph for Health Professionals. Madison, Wisconsin: Wisconsin Department of Health and Social Services, 1978.

Endorsed by Wisconsin Chapter of the American Academy of Pediatrics. Somewhat technical, but covers many aspects of infant feeding. Good reference for the teacher.

Fomon, Samuel J. *Infant Nutrition.* 2nd ed. Philadelphia: W. B. Saunders Company, 1974.

The "Bible" of infant nutrition. Fairly technical; however, first chapter is useful for recent trends and historical perspective.

Frankle, Reva T., and Owen, Anita Yanochick. *Nutrition in the Community: the Art of Delivering Services.* St. Louis: The C. V. Mosby Company, 1978.

Chapter 5 gives a good overview of community nutrition programs which may be helpful to the pregnant teenager and/or teenage parent.

Goodwin, Mary T., and Pollen, Gerry. *Creative Food Experiences for Children.* Washington, D.C.: Center for Science in the Public Interest, 1974.

Activities are aimed at a younger age group, but some could be adapted to teenage group with a bit of thought and rewriting. Good, useful recipe section.

Hamilton, Eva May, and Whitney, Eleanor. *Nutrition: Concepts and Controversies.* St. Paul, Minnesota: West Publishing Company, 1979.

Aimed at college freshmen; excellent reference for the teacher's library. Easily readable and reliable resource for general nutrition information.

Hayes, Jack, ed. *Food For Us All.* Yearbook of Agriculture, 1969. Washington, D.C.: U. S. Government Printing Office, 1969.

Old, but sections on buying and cooking food are still useful.

How to Buy Food for Economy and Quality: Recommendations of the U. S. Department of Agriculture. New York: Dover Publications, Inc., 1975.

A collection of thirteen "How to Buy" booklets previously published by USDA. Includes meats, dairy products, fruits and vegetables.

Katt, Sally, ed. "What's to Eat?" and Other Questions Kids Ask About Food. Yearbook of Agriculture, 1979. Washington, D.C.: U. S. Government Printing Office, 1979.

Colorful. Chapters on supermarket shopping and general nutrition most useful for pregnant teenage population reached by this guide.

Katz, Deborah, and Goodwin, Mary T. Food: Where Nutrition, Politics and Culture Meet. Washington, D.C.: Center for Science in the Public Interest, 1976.

Section on Food and the Consumer most useful; aimed at food choice, safety, pricing, and labeling information.

Lansky, Vicky. Feed Me, I'm Yours. Wayzata, Minnesota: Meadowbrook Press, 1974.

Includes ideas for baby food from scratch, finger foods, and toddler foods. Also innovative suggestions for breakfast and snacks. Good in-class reference book.

Lansky, Vicky. The Taming of the C.A.N.D.Y. Monster. Wayzata, Minnesota: Meadowbrook Press, 1978.

Chapters on brown-bagging, alternatives to junk-food snacks, and alternatives to drinking milk are especially appropriate. Some introductory nutrition information may be questionable, though.

Lappe, Frances Moore. Diet for a Small Planet. New York: Ballantine Books, 1971.

Extensive, readable information about protein complementing with plant proteins. Recipes for each type of complementing are included.

Luke, Barbara. Maternal Nutrition. Boston: Little, Brown and Company, 1979.

Written as source book for professionals in the health fields. Chapters on iron-deficiency anemia, pica, lactose intolerance, smoking, Fetal Alcohol Syndrome, and adolescent pregnancy contain information useful to the teacher. Each chapter also contains further references.

Mapes, Martha, and Keown, Gail. Try Something New. Ithaca, New York: Cornell University, undated.

Lesson plans which cover calcium, vitamin C, vitamin A and iron. Aimed at adolescents and preadolescents.

Nutrition Source Book. Rosemont, Illinois: National Dairy Council, 1978.

Concise overview of general concepts in nutrition. Food charts would be especially useful for reference.

Pearl, Anita May. Completely Cheese. New York: Warner Books, 1979.

All you ever wanted to know about cheese, but were afraid to ask: history, classification, recipes...great book for "browsing".

Pipes, Peggy L. Nutrition in Infancy and Childhood. 2nd ed. St. Louis: The C. V. Mosby Company, 1981.

Chapter on infant feeding and nutrition. Also chapters on specific nutrients: sources and requirements.

Robertson, Laurel; Flinders, Carol; and Godfrey, Bronwen. Laurel's Kitchen: A Handbook for Vegetarian Cookery and Nutrition. Berkeley, California: Nilgiri Press, 1976.

Especially useful because of tables of some less common foods and their nutrient contents.

Scott, Keith G; Field, Tiffany; and Robertson, Euan, eds. Teenage Parents and their Offspring. New York: Grune and Stratton, 1981.

Excellent review of many facets of teenage pregnancy; abounds with references. Chapter on nutrition and early teenage pregnancy somewhat technical.

Stern, Judith S., and Denenberg, R. V. How to Stay Slim and Healthy on the Fast Food Diet. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1980.

So applicable to the teenage population, pregnant or not. Food tables for many of the fast food chains. However, care must be taken to emphasize that pregnancy is not the time for dieting, if this book is used in class. Otherwise, it would be a good reference for the teacher.

Tannahill, Reay. Food in History. New York: Stein and Day Publishers, 1973.

Particularly useful reference for answering questions about the origin of a particular food. Could be interesting, entertaining reading for some teenagers.

Weaver, Ann A. Planning Meals and Shopping. Palo Alto, California: Fearon Publishers, 1970.

Workbook, especially useful for the younger teen, with little experience in planning and shopping for meals.

Westpheling, Kathie; Vinson, Sara Jane; and Groll, Lorelei. *Nutrition Curriculum on Life-Cycle Nutrition Needs for School-age Mothers and School-age Parents*. San Jose, California: Santa Clara County Health Department, 1981.
Curriculum guide, resource list, recipes...many adaptable ideas.

Whitney, Julie. *Curriculum Guide for Health Education*: *Nutrition*. Washington, D.C.: The National Catholic Education Association, 1976.
Unit on consumer education. Unit on nutrition includes module on nutrition during pregnancy.

Winick, Myron. *Growing Up Healthy*. New York: William Morrow and Company, Inc., 1982.
Non-technical nutrition information from a leading M.D. and nutritionist. Somewhat heavy on breast-feeding. Could be read by older teenager.

Worthington-Roberts, Bonnie S.; Vermeersch, Joyce; and Williams, Sue Rodwell. *Nutrition in Pregnancy and Lactation*. 2nd ed. St. Louis: The C. V. Mosby Company, 1981.
Excellent reference book. Especially useful is chapter on nutritional needs of the pregnant adolescent.

Zackler, Jack, and Brandstadt, Wayne. *The Teenage Pregnant Girl*. Springfield, Missouri: Charles C. Thomas, 1975.
Includes chapters on obstetric and medical problems of teenage pregnancy, and nutrition and pregnancy in adolescence.

Journal/Magazine Articles

Abrams, Barbara. "Helping Pregnant Teenagers Eat Right." Nursing 81 11 (3) (March 1981): 46-47.

Appledorf, Howard. "Nutritional Analysis of Foods from Fast-food Chains." Food Technology 28 (April 1974): 50-55.

Bartel, Charlotte Heckmann. "Old Enough to Get Pregnant...Too Young to Have Babies." Nursing 81 11 (3) (March 1981): 44-55.

Caldwell, Mariel. "Nutrition in Adolescent Pregnancy." Illinois Teacher 21 (4) (March/April 1978): 204-209.

Dwyer, Johanna T.; Feldman, Jacob J.; and Mayer, Jean. "Nutritional Literacy of High School Students." Journal of Nutrition Education 2 (Fall 1970): 59-66.

Heald, Felix P., and Jacobsen, Marc S. "Nutritional Needs of the Pregnant Adolescent." Pediatric Annals 9 (3) (March 1980): 21-31.

"How Nutritious Are Fast-food Meals?" Consumer Reports (May 1975): 278-281.

Iber, Frank L. "Fetal Alcohol Syndrome." Nutrition Today 15 (5) (September/October 1980): 4-11.

Lee, Essie E. "Food Fads, Nutrition, and Teenage Mothers." Childhood Education 53 (3) (January 1977): 143-146.

Perloff, Betty P., and Butrum, Ritva R. "Folacin in Selected Foods." Journal of the American Dietetic Association 70 (February 1977): 161-172.

Singleton, Nan Chachere; Lewis, Harvey; and Parker, Jesse J. "The Diet of Pregnant Teenagers." Journal of Home Economics 68 (4) (September 1976): 43-45.

Spitze, Hazel Taylor. "Games that Teach." Journal of Home Economics 64 (4) (April 1972): 8-12.

Spitze, Hazel Taylor. "Innovative Techniques for Teaching Nutrition." Journal of Nutrition Education. 2 (Spring 1971): 156-159.

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Films/Filmstrips

Breastfeeding: A Special Closeness (1977), film, 23½ minutes. Motion, Inc., 4437 Klingle Street, N.W., Washington, D.C. 20015.

Parents talk about how they make breastfeeding work, how they work and breastfeed, what they eat. Would serve as a good stimulus to discussion but should be followed up with additional practical information. Black and Hispanic minorities are well represented. *

Build A Better Bag Lunch (1981), film. Alfred Higgins Productions, Inc., 9100 Sunset Blvd., #100, Los Angeles, California 90060.

An excellent film showing a variety of ideas for bag lunches and how to keep them safe to eat. *

Eating on the Run (1975), film, 15½ minutes. Alfred Higgins Productions, Inc., 9100 Sunset Blvd., #100, Los Angeles, California 90060.

Film relevant to typical problems of students, how to get a balanced breakfast, lunch, and snacks in little time. Gives practical suggestions, ideas for quick, nutritious meals and snacks. *

The Fast Food Phenomenon (1979), filmstrip or slides (with cassette). Christina Stark, Department of Food and Nutrition, Cornell University, 309 Martha Van Rensselaer Hall, Ithaca, New York 14853.

This would be a good A/V to use as a short discussion starter for a lesson on our fast food life style. *

First Foods (1979), film, 14 minutes. Society for Nutrition Education, 2140 Shattuck Avenue, Suite 1110, Berkeley, California 94704.

Reviews a selection of commercially prepared baby foods. Discussion and demonstration of home preparation of baby foods. Provides basic information about the feeding of solid food to babies during the first year of life.

Foods to Grow On (1978), 3 filmstrips/cassettes. Tupperware Educational Services, Tupperware Home Parties, P. O. Box 2353, Orlando, Florida 32802.

Filmstrip investigates the role of food in development from before conception through adolescence. Uses values clarification techniques through accompanying activity guide and duplicating masters. *

Have A Healthy Baby (1968), film, 21 minutes. Churchill Films, 662 North Robertson Blvd., Los Angeles, California 90069. Available from BAVI (#2559). *

RESOURCE LIST: Films/Filmstrips

Inside My Mom ( ), filmstrip/cassettes. The National Foundation/ March of Dimes, 1275 Mamoroneck Avenue, White Plains, New York 10605.

Label Literacy: How to Read Food Packaging and Using the Information (1979), 2 filmstrips/cassettes. Sunburst Communications, 39 Washington Avenue, Pleasantville, New York 10570.

Students are encouraged to read ingredient and nutrition labels and consider price, nutrient content, convenience, size when shopping. Open-dating and additives are also addressed. *

Meat and Poultry: How to Select Them (1976), film, 18 minutes. FilmFair Communications, 10900 Ventura Blvd., Studio City, California 91604. Available from BAVI (#1117). **

Covers selection of good pork, beef, lamb and chicken. Emphasizes qualities of meat (color, age, economy) in a visit to a butcher.

Nutrition: Fueling the Human Machine (1978), film, 18 minutes. BFA Educational Media, 2211 Michigan Avenue, P. O. Box 1795, Santa Monica, California 90496. Available from BAVI (3831). **

Snacks Count, Too! (1975), film, 11 minutes. Journal Films, Inc., 930 Pitner Avenue, Evanston, Illinois 60202. Available from BAVI (#9599). **

Introduces the idea that snacks can be part of a nutritious diet, and suggests that they should be food from regular meals. Emphasizes individual responsibility for diet.

Read the Label, Set a Better Table (1977), film, 14 minutes. Modern Talking Picture Service. Available on loan from local Food and Drug Administration office. (Minneapolis Office.)

Very entertaining presentation of nutrition labeling. *

Winning the Grocery Game: Language and the Supermarket (1977), 2 sound filmstrips with other teaching aids. The Learning Seed Company, 145 Brentwood Drive, Palatine, Illinois 60067.

Provides a great deal of information in an interesting way. Contains good ideas for projects. Is fairly anti-big business, but leaves the final choice up to student. *

RESOURCE LIST: Films/Filmstrips

What Are You Going to Do About Alcohol? (1975), 2 filmstrips/cassettes.
Guidance Associates, Box 300, White Plains, New York 10602.
Alcohol as a drug, absorption, role in social situations. Poses various teen drinking situations.

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* Films/Filmstrips reviewed by NET nutritionists and listed in Suggested Resource List (revised May 1981).

** BAVI (Bureau of AudioVisual Instruction) University of Wisconsin - Extension, P. O. Box 2093, Madison, Wisconsin 53701, or University Avenue, Madison, Wisconsin 53706.

Booklets/Pamphlets

American Cancer Society, Inc.
(contact local Division, or...)
National Headquarters:
777 Third Avenue
New York, NY 10017

Why Start a Life Under a Cloud?
(pamphlet)

The American College of Obstetricians and Gynecologists
One East Wacker Drive
Chicago, IL 60601

Adolescent Perinatal Health: A Guidebook for Services
(booklet)

The California Department of Health
George C. Cunningham, M.D., Chief
Maternal and Child Health Branch
714 P Street
Sacramento, CA 95814

Nutrition for Pregnancy and Breast-Feeding
(pamphlet series)

1. Your Weight and Weight Gain
2. Using Vitamin/Mineral Pills and Salt
3. Relief from Common Problems: Nausea, Constipation, Heartburn
4. Eating Right for Your Baby

Cooperative Extension, Cornell University
Division of Nutritional Sciences
New York State College of Human Ecology
New York State College of Agriculture and Life Sciences
Cornell University
Ithaca, NY 14853

Nutrition
(pamphlet series)

1. Iron: The Hard-to-get Nutrient
2. Milk: Your Baby's First Food
3. Money-saving Hints for the Food Shopper
4. The What, When and How Much of Baby Food

The National Dairy Council
(contact local office, or...)
National Office
The National Dairy Council
Rosemont, IL 60018

Food Before Six
(pamphlet)
Guide to Good Eating
(pamphlet)
How Teeth Grow
(pamphlet)

RESOURCE LIST: Booklets/Pamphlets

The National Foundation/March of Dimes Box 2000 White Plains, NY 10602	Be Good to Your Baby Before It Is Born (booklet) Drugs, Alcohol, Tobacco Abuse During Pregnancy (pamphlet) Food and Pregnancy (pamphlet) Pregnant? Before You Drink, Think (pamphlet) Recipe for Healthy Babies (pamphlet) Comic Book Series: 1. Food for Thought 2. The Junk Food Blues 3. Inside Your Body, Inside Your Head 4. Days of Change
Ross Laboratories (local representative: get name from local hospital nursery, or...) 625 Cleveland Avenue Columbus, OH 43216	Nutrition, Growth, and Development during Your Baby's First Year: A Reference Book (booklet) Breast-feeding Your Baby (booklet) How to Breast-feed Your Baby (booklet)
Ralston Purina Company Corporate Consumer Services Checkerboard Square St. Louis, MO 63188	Appetite Annie's Action Packed Fun Filled Guide to A Healthy Pregnancy (booklet)
Mead Johnson (local representative: get name from local hospital nursery, or...) Nutritional Division 11001 Lucky Oak Street Cupertino, CA 95014	Breast-feeding: A Nutritional Perspective (booklet) A Healthy Start for You and Your Baby (pamphlet) Let's Set the Record Straight About Vitamins (booklet) A Primer on Infant Nutrition (booklet) Weaning Your Baby (booklet) Your Baby's Formula (booklet)

RESOURCE LIST: Booklets/Pamphlets

United States Government Printing Office Washington, D.C. 20402	
Department of Agriculture	*What Shall I Feed My Baby?: A Month-by-Month Guide* (booklet) Program Aid #1281 *Working with the Pregnant Teenager: A Guide for Nutrition Educators* (loose-leaf booklet and charts) Program Aid #1303
Department of Health and Human Services	
Public Health Service	*Alcohol and Your Unborn Baby* (booklet) DHHS Publication No. (ADM) 81-521 *Caffeine and Pregnancy* (pamphlet) DHHS Publication No. (FDA) 81-1081
National Institute on Alcohol Abuse and Alcoholism	*The Drinking Question* (pamphlet)
Wisconsin Clearinghouse for Alcohol and and Other Drug Information P. O. Box 841 Madison, WI 53701	*Choices for the Future: Alcohol and Pregnancy* (pamphlet) *Questions People Ask About Drinking during Pregnancy* (information sheet)
Wisconsin Department of Health and Social Services The Division of Health Box 309 Madison, WI 53701	*Food for Health* (pamphlet) *Food for Healthy Boys and Girls* (pamphlet) *Infant Feeding Leaflets* (11 pamphlets) *Iron in the Food You Eat* (booklet) *"Munch"* (comic book format) *Nutrition for Parents and Healthy Babies* (pamphlet) *Why Iodized Salt* (pamphlet) *Vegetarian Diets* (booklet)

B2630

food resources
and
human nutrition

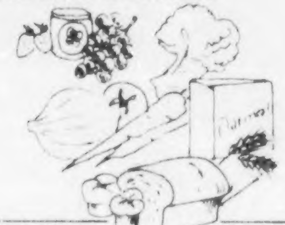
NUTRIENTS – Sources and Functions

Jane Voichick and Mary Lavender

This publication reviews some of the major nutrients and the foods that supply them. No single food supplies the proper amounts of all the key nutrients, so it is important to include a wide variety of foods in the diet. Nutrition labels also provide some reliable information about nutrient composition of food.

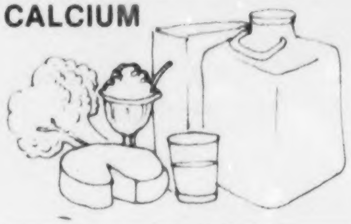
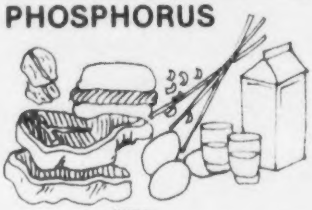
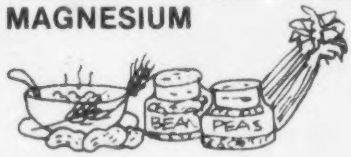
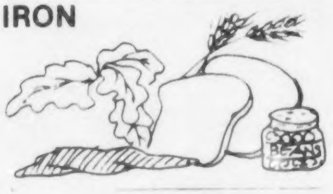
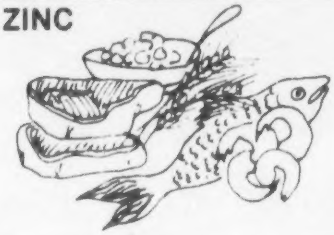
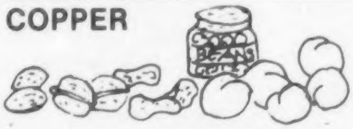
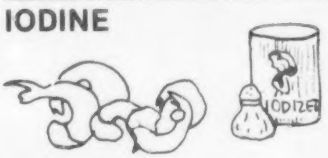
MACRO-NUTRIENTS

Proteins, fats and carbohydrates are required by the body in relatively large amounts and are called macronutrients. These three nutrients have specific functions and also provide the body with energy. Food energy is essential for normal body functions such as breathing, blood circulation, maintaining body temperature and physical activity. Excess food energy from any source will be stored as fat.

Macro-Nutrients	Use in the Body	Sources
CARBOHYDRATES 	1. Carbohydrates (sugars and starches) supply energy for body processes and physical activity. 2. Fiber (or "roughage") consists of indigestible forms of carbohydrates or other plant cell substances which provide needed bulk in the digestive tract and help elimination.	Starches and sugar: breads and cereals, fruits and vegetables, milk, table sugar, molasses, honey, cakes, candies, soft drinks. Fiber: grains, fruits, vegetables, nuts, legumes.
PROTEIN 	1. Amino acids are the sub-units of protein which are used to build and repair body tissues. Some amino acids cannot be made by the body itself. These essential amino acids must be supplied by food. 2. Some proteins, such as hormones and enzymes, control and regulate body processes. Some proteins in the blood, the antibodies, help fight infection; other blood proteins carry oxygen throughout the body and regulate fluid levels in the tissues. 3. If you eat more protein than your body needs for these special functions, the excess protein will be used as a source of energy.	Proteins that supply a good balance of all of the essential amino acids are found in lean meats, poultry, eggs, fish, dairy products and combinations of grains, legumes (beans) and nuts.
FATS 	1. The body needs fatty acids, constituents of fat, to maintain healthy cell membranes. Some fatty acids that cannot be made by the body must be included in food. 2. Fats help the body absorb some vitamins. 3. Fats are a more concentrated form of food energy than carbohydrates or proteins. 4. Fats carry food flavors and also give us a sense of fullness after meals.	Cooking fats and oils, salad dressings, butter, margarine, fat on meat, butterfat in cream, ice cream, whole milk and cheese.

MINERALS

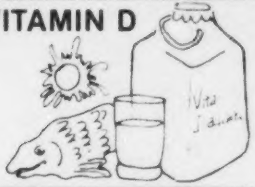
Minerals are used by the body to build structures such as bones and teeth and to regulate many body processes. Minerals are often essential components of enzymes and of some hormones.

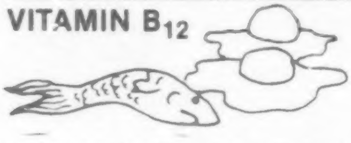
Mineral	Use in the Body	Sources
CALCIUM 	1. Calcium combines with other minerals and protein to build and maintain bones and teeth. 2. Calcium is also needed for nerve transmission and muscle contraction. 3. Calcium is needed for blood to clot.	Milk and other dairy products, leafy vegetables and broccoli, canned fish with edible bones.
PHOSPHORUS 	1. Phosphorus binds with calcium to build strong bones and teeth. 2. Phosphorus plays an important role in making food energy available in cells.	Meat, poultry, fish, milk, eggs, nuts, dried beans, peas and cereal grains.
MAGNESIUM  	1. Magnesium is required for proper muscle function. 2. Magnesium works with enzymes to build protein and to release energy.	Cereal grains, dried beans and peas, nuts, dark green vegetables, fish.
IRON  	1. Iron in the blood cells helps carry oxygen to all body tissues. 2. All body cells need iron for reactions (processes) that use oxygen to release energy from carbohydrates and fats.	Liver, other organ meats, lean meat, egg yolk, dry beans, dry peas, dark-green leafy vegetables, dried fruit, whole grain and enriched bread and cereals, and molasses.
ZINC 	1. Zinc is involved with many chemical reactions in the body. Zinc is needed to heal wounds and for normal growth and development.	Seafood, lean meats, whole grains.
COPPER  	1. Copper helps the body produce elastic proteins found in blood vessels and the coating for nerve fibers.	Grains, nuts, shellfish, liver, kidney, dried legumes.
IODINE  	1. Iodine in thyroid hormones helps regulate energy production in all body cells.	Iodized salt, salt water fish and other seafoods, vegetables grown in iodine-rich soil, some dairy products, breads.

VITAMINS

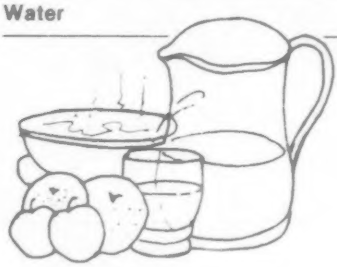
Vitamins are compounds required in the diet in extremely small amounts. Although vitamins do not provide body energy, some vitamins enable the body to use the energy from fats, carbohydrates and proteins. If the diet does not contain adequate amounts of vitamins, the body will not function efficiently.

It is important to eat a wide variety of foods as no single food contains all of the needed vitamins in the correct proportions. Excesses of vitamins provide no additional benefits and excesses of some, such as vitamins A and D, can be harmful.

Vitamins	Use in the Body	Sources
VITAMIN A	1. Vitamin A aids in the ability to see in dim light. 2. Vitamin A helps maintain healthy skin, hair and moist membranes. 3. Vitamin A is required for proper bone and tooth development.	Liver; dark-green and deep-yellow vegetables such as broccoli, leafy greens, carrots, pumpkin, sweet potatoes, and winter squash; apricots; cantaloupe; eggs; whole milk and fortified low fat and skim milk; butter and fortified margarine.
VITAMIN D 	1. Vitamin D enables the body to absorb calcium from food and maintain a constant amount of calcium in the blood. 2. Vitamin D is necessary for normal bone growth.	Fish liver oils; foods, such as milk, that are fortified with vitamin D. Direct sunlight produces vitamin D from a compound in the skin.
VITAMIN E	1. Vitamin E protects fatty acids from breakdown.	Vegetable oils, whole grains, leafy green vegetables.
VITAMIN K	1. Vitamin K is required for the process of blood clotting.	Microorganisms in the intestinal tract of healthy people make Vitamin K. It is also found in leafy vegetables.
THIAMIN-VITAMIN B_1	1. Thiamin is required for body cells to obtain energy from carbohydrates.	Lean pork, liver, other organ meats, dry beans and peas, asparagus, broccoli, collards, corn, green peas, potato, spinach, turnip greens, cereal.
RIBOFLAVIN-VITAMIN B_2	1. Riboflavin is used in reactions that provide energy.	Milk, liver, other organ meats, lean meat, asparagus, beet greens, broccoli, collards, kale, turnip greens, spinach, winter squash.
NIACIN	1. Niacin is required for cells to obtain energy from carbohydrates.	Liver, lean meat, poultry, fish, peanuts and peanut butter, beans and peas, and whole grain and enriched breads and cereals.
PYRIDOXINE-VITAMINE B_6	1. Pyridoxine is involved in the body's use of amino acids.	Meat, liver, vegetables, whole grain cereals.

Vitamins	Use in the Body	Sources
FOLACIN 	1. Folacin is needed to produce both white and red blood cells.	Deep green leafy vegetables, liver, whole grain cereals.
VITAMIN B$_{12}$ 	1. Vitamin B$_{12}$ is needed to produce normal red blood cells.	Liver, kidney, milk and milk products, eggs, fish, lean meat.
PANTOTHENIC ACID 	1. Pantothenic acid participates in release of energy from protein, carbohydrates and fat.	Organ meats, fish, whole grain cereals.
BIOTIN 	1. Biotin helps body use carbohydrates and fat.	Organ meats, milk, egg yolk, yeast.
ASCORBIC ACID – VITAMIN C 	1. Ascorbic acid maintains the strength of blood vessels, skin, teeth and bone. 2. Ascorbic acid helps the body use some minerals such as calcium and iron.	Broccoli, peppers, oranges, cantaloupe, grapefruit, strawberries, tomatoes, watermelon, deep green leafy vegetables, cabbage, potatoes.

WATER

Water	Use in the body	Sources
	1. Water is the major component of blood and most cells. Water carries nutrients and oxygen to cells and removes waste products. 2. Water regulates the body temperature. 3. Water acts as a lubricant for bones and joints.	Water, beverages, soup, fruits and vegetables. Most foods contain some water.

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